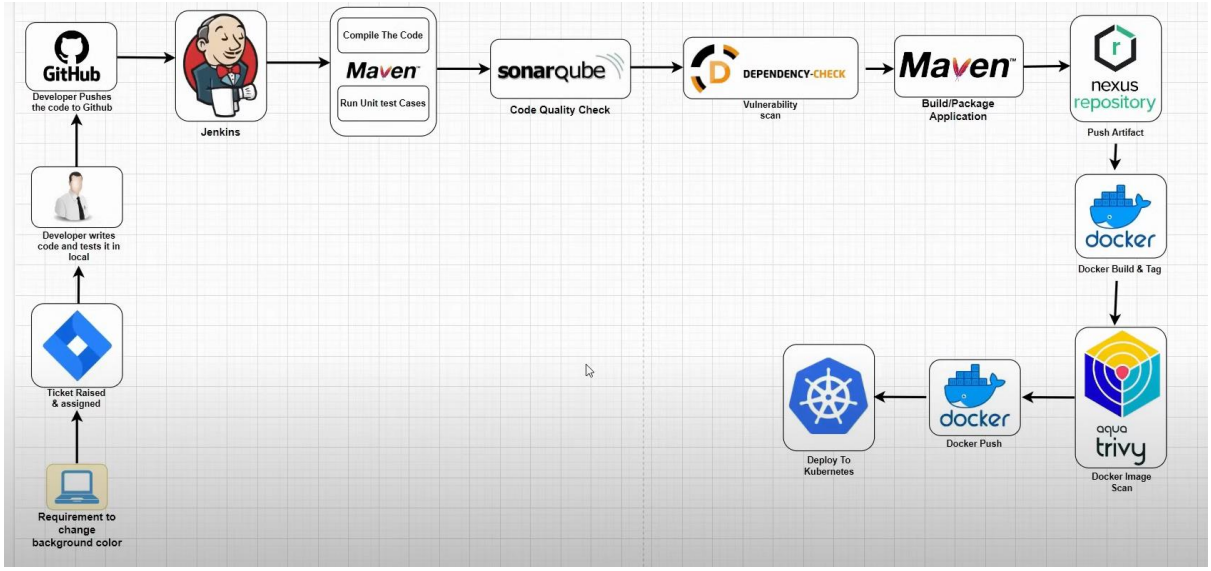
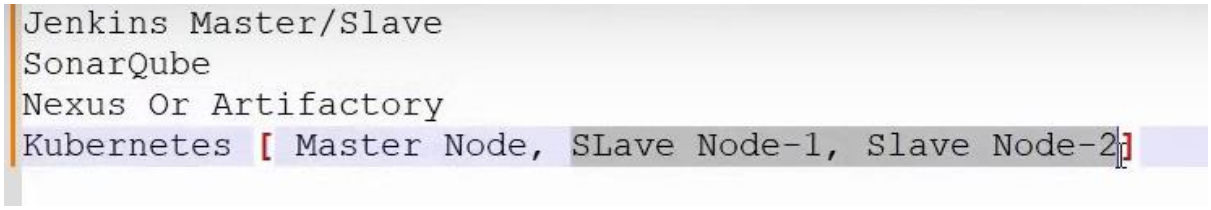
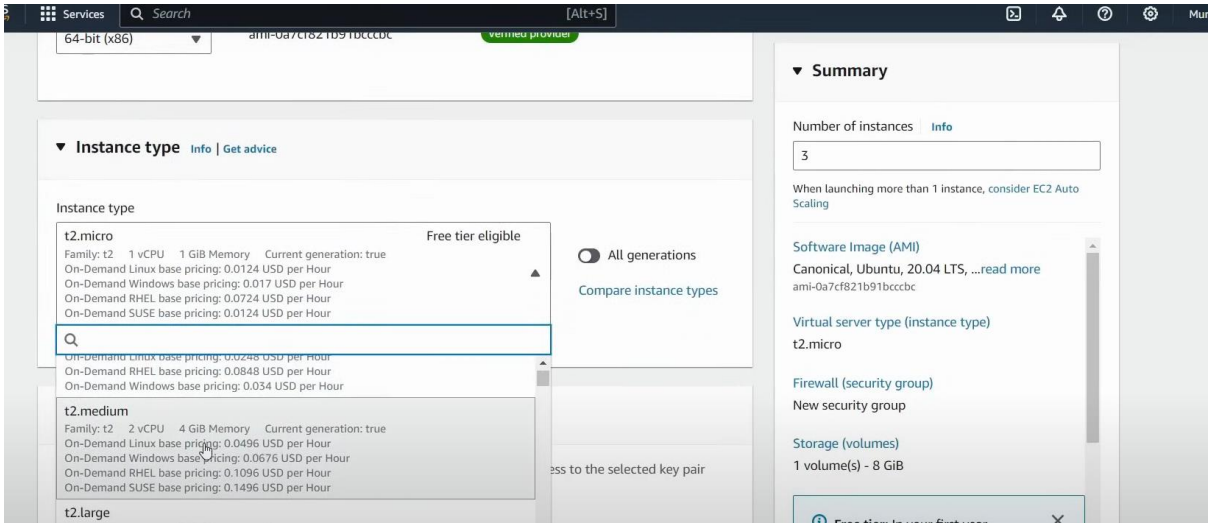
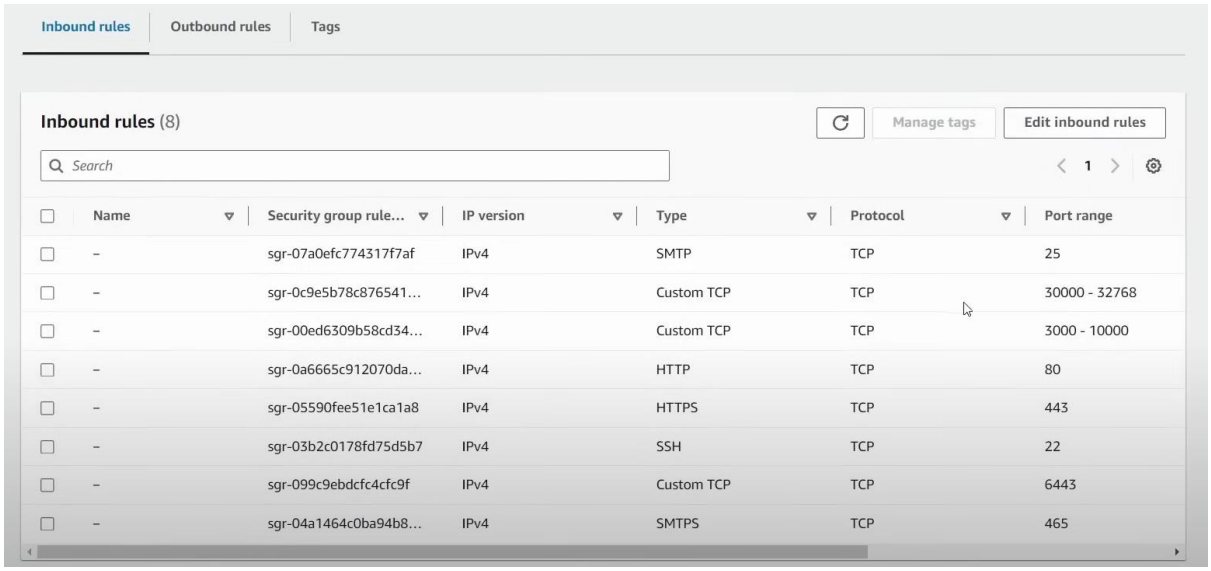
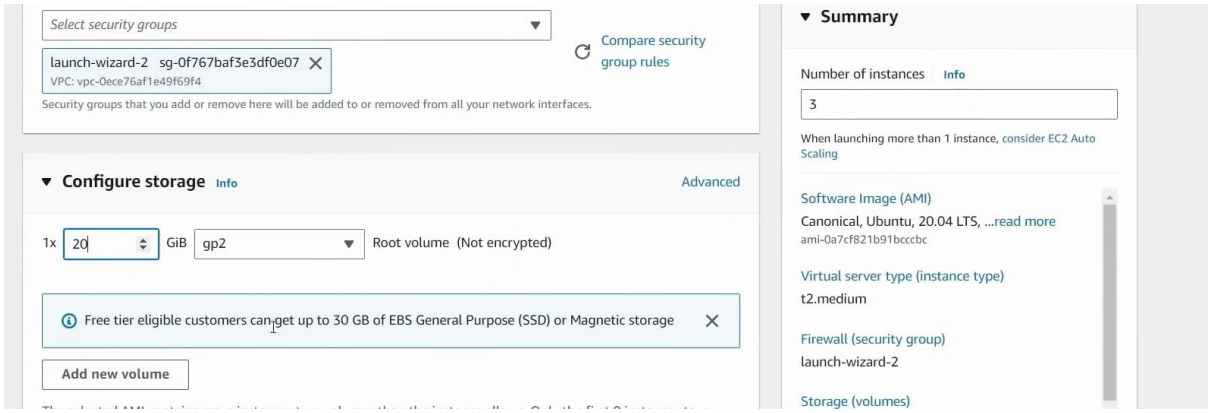
Project Link: https://github.com/jaiswaladi246/Ekart

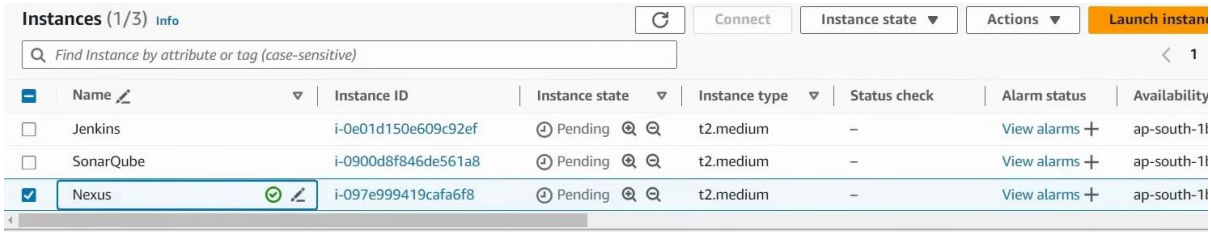


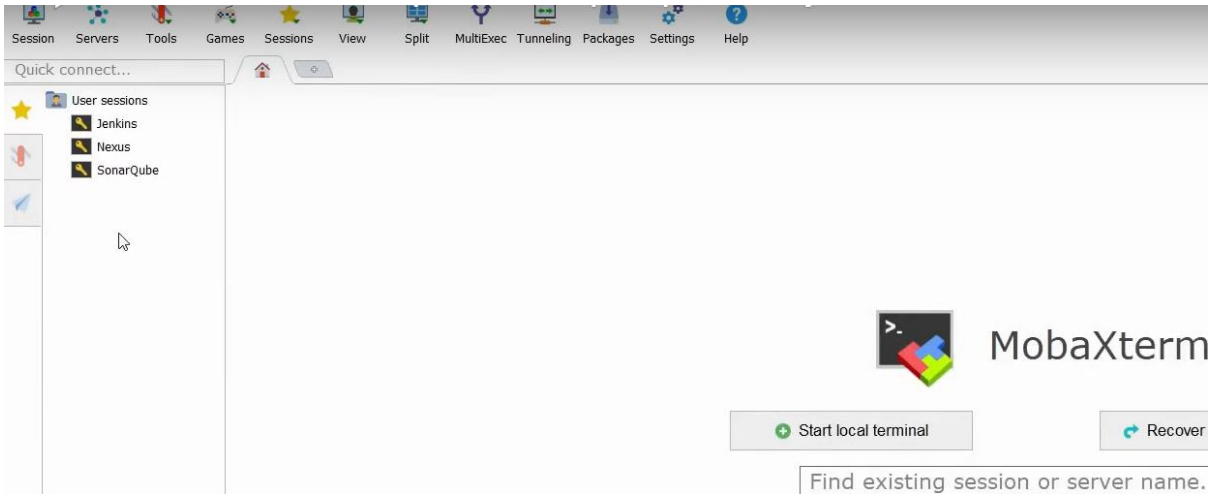


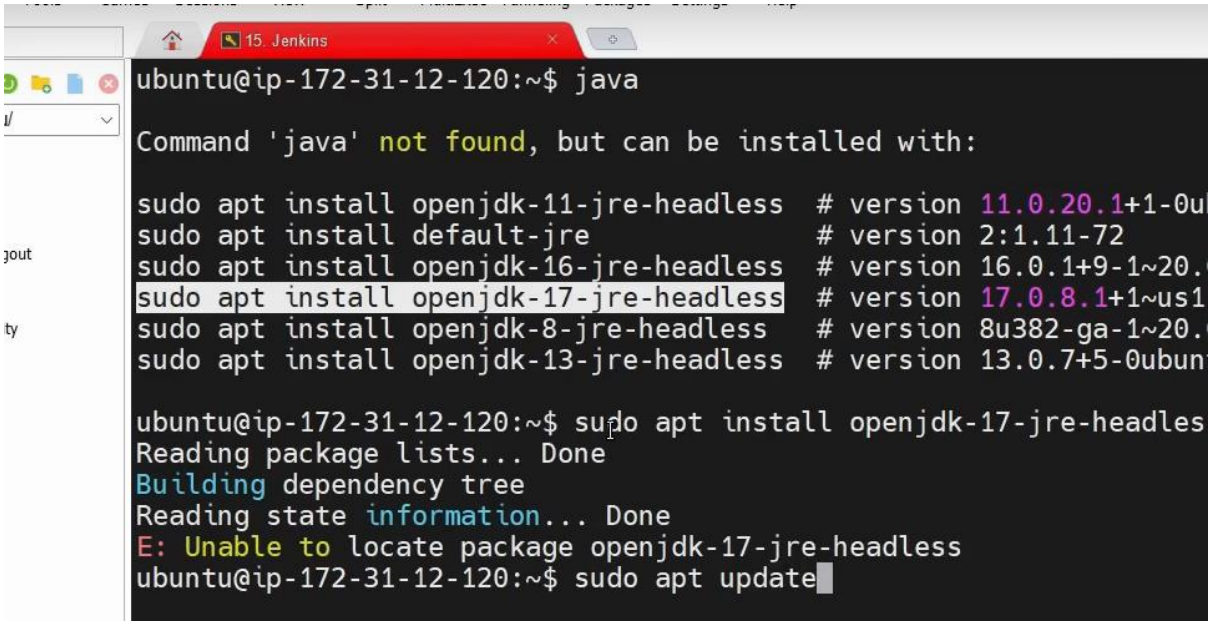

Services
Search
[Alt+S]
64-bit (x86)
Instance type
Info | Get advice
Instance type
t2.micro
Free tier eligible
Family: t2 1 vCPU 1 GiB Memory Current generation: true
On-Demand Linux base pricing: 0.0124 USD per Hour
On-Demand Windows base pricing: 0.017 USD per Hour
On-Demand RHEL base pricing: 0.0724 USD per Hour
On-Demand SUSE base pricing: 0.0124 USD per Hour
All generations
Compare instance types
On-Demand RHEL base pricing: 0.0848 USD per Hour
On-Demand Windows base pricing: 0.034 USD per Hour
t2.medium
Family: t2 2 vCPU 4 GiB Memory Current generation: true
On-Demand Linux base pricing: 0.0496 USD per Hour
On-Demand Windows base pricing: 0.0676 USD per Hour
On-Demand RHEL base pricing: 0.1096 USD per Hour
On-Demand SUSE base pricing: 0.1496 USD per Hour
t2.large
Summary
Number of instances
Info
3
When launching more than 1 instance, consider EC2 Auto Scaling
Software Image (AMI)
Canonical, Ubuntu, 20.04 LTS, ...read more
ami-0a7cf821b91bcccbc
Virtual server type (instance type)
t2.micro
Firewall (security group)
New security group
Storage (volumes)
1 volume(s) - 8 GiB


Inbound rules
Outbound rules
Tags
Inbound rules (8)
Manage tags
Edit inbound rules
Search
1
Name
Security group rule...
IP version
Type
Protocol
Port range
- sgr-07a0efc774317f7af IPv4 SMTP TCP 25
- sgr-0c9e5b78c876541... IPv4 Custom TCP TCP 30000 - 32768
- sgr-00ed6309b58cd34... IPv4 Custom TCP TCP 3000 - 10000
- sgr-0a6665c912070da... IPv4 HTTP TCP 80
- sgr-05590fee51e1ca1a8 IPv4 HTTPS TCP 443
- sgr-03b2c0178fd75d5b7 IPv4 SSH TCP 22
- sgr-099c9ebdcfc4cfc9f IPv4 Custom TCP TCP 6443
- sgr-04a1464c0ba94b8... IPv4 SMTPS TCP 465

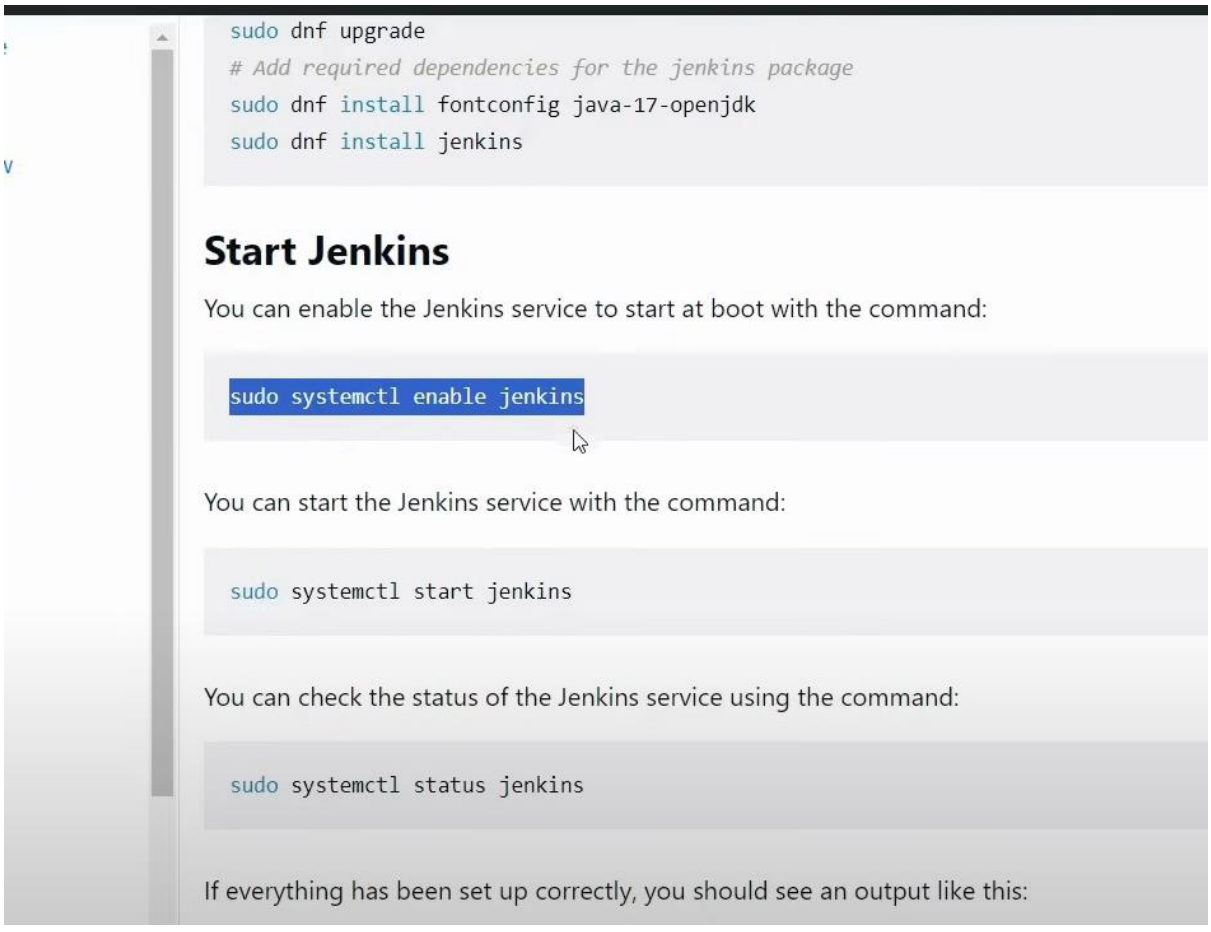

Select security groups
launch-wizard-2 sg-0f767baf3e3df0e07
VPC: vpc-0ece76af1e49f69f4
Security groups that you add or remove here will be added to or removed from all your network interfaces.
Compare security group rules
Configure storage Info
Advanced
1x 20 GiB gp2 Root volume (Not encrypted)
Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage
Add new volume
Summary
Number of instances Info
3
When launching more than 1 instance, consider EC2 Auto Scaling
Software Image (AMI)
Canonical, Ubuntu, 20.04 LTS, ...read more
ami-0a7cf821b91bcccbc
Virtual server type (instance type)
t2.medium
Firewall (security group)
launch-wizard-2
Storage (volumes)

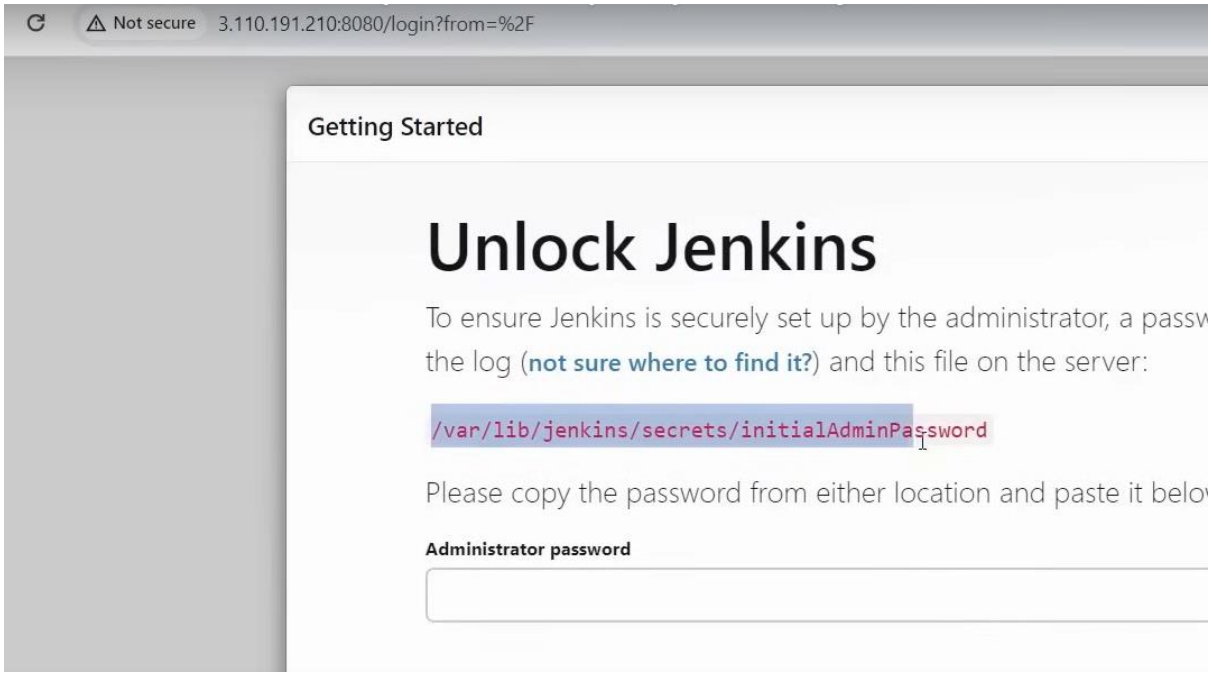

Instances (1/3) Info
Connect
Instance state
Actions
Launch instanc
Find Instance by attribute or tag (case-sensitive)
1
Name
Instance ID
Instance state
Instance type
Status check
Alarm status
Availability
Jenkins i-0e01d150e609c92ef Pending t2.medium - View alarms ap-south-1
SonarQube i-0900d8f846de561a8 Pending t2.medium - View alarms ap-south-1
Nexus i-097e999419cafa6f8 Pending t2.medium - View alarms ap-south-1

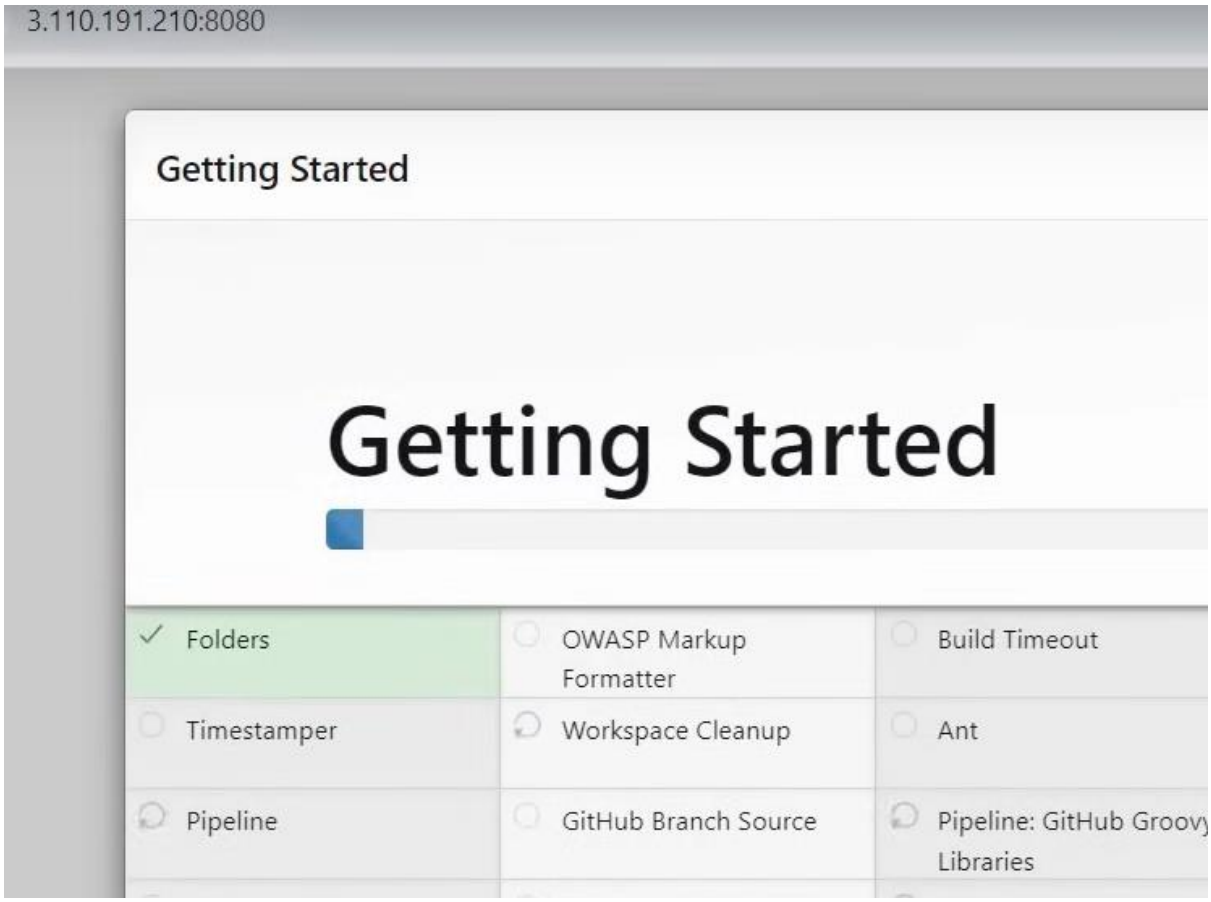

Session
Servers
Tools
Games
Sessions
View
Split
MultiExec
Tunneling
Packages
Settings
Help
Quick connect...
User sessions
Jenkins
Nexus
SonarQube
MobaXterm
Start local terminal
Recover
Find existing session or server name.


15. Jenkins
ubuntu@ip-172-31-12-120:~$ java
Command 'java' not found, but can be installed with:
sudo apt install openjdk-11-jre-headless # version 11.0.20.1+1-0u
sudo apt install default-jre # version 2:1.11-72
sudo apt install openjdk-16-jre-headless # version 16.0.1+9-1~20.
sudo apt install openjdk-17-jre-headless # version 17.0.8.1+1~us1
sudo apt install openjdk-8-jre-headless # version 8u382-ga-1~20.
sudo apt install openjdk-13-jre-headless # version 13.0.7+5-0ubun
ubuntu@ip-172-31-12-120:~$ sudo apt install openjdk-17-jre-headles
Reading package lists... Done
Building dependency tree
Reading state information... Done
E: Unable to locate package openjdk-17-jre-headless
ubuntu@ip-172-31-12-120:~$ sudo apt update

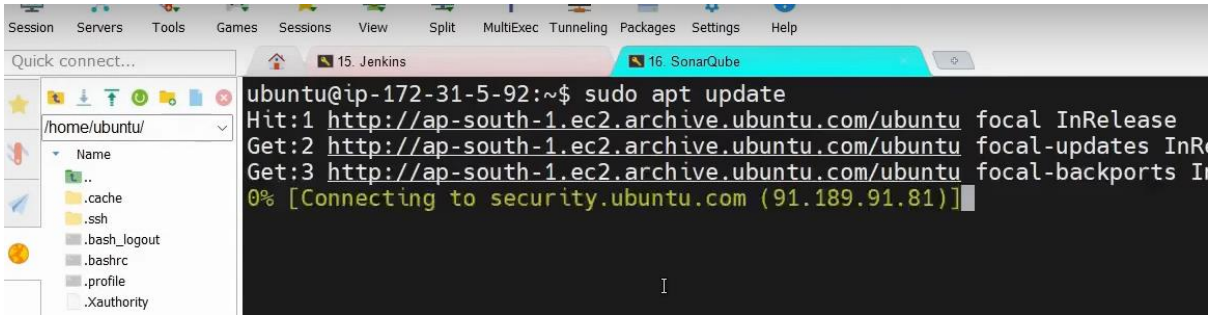
Installing Jenkins

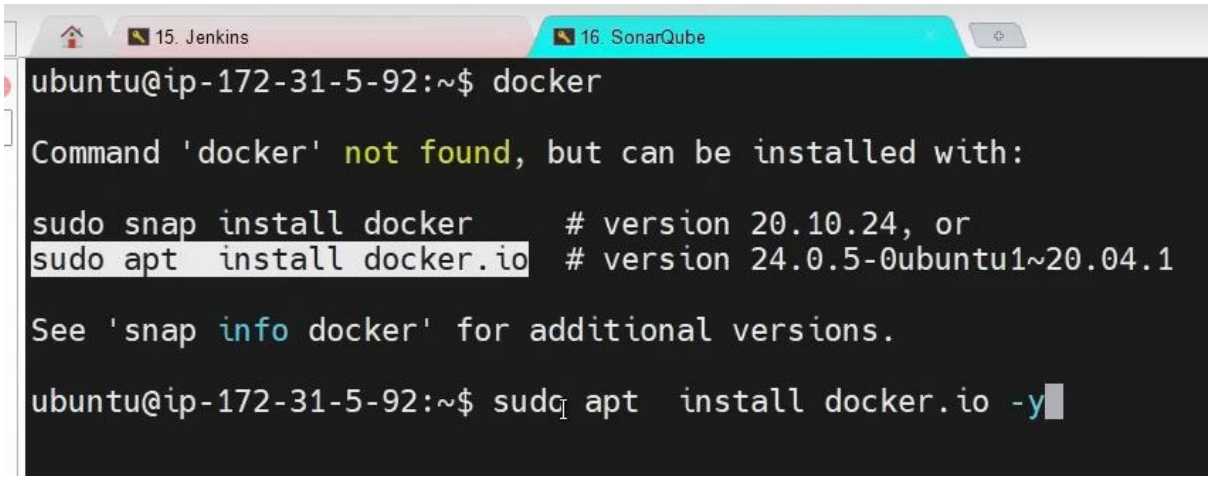

sudo dnf upgrade
# Add required dependencies for the jenkins package
sudo dnf install fontconfig java-17-openjdk
sudo dnf install jenkins
Start Jenkins
You can enable the Jenkins service to start at boot with the command:
sudo systemctl enable jenkins
You can start the Jenkins service with the command:
sudo systemctl start jenkins
You can check the status of the Jenkins service using the command:
sudo systemctl status jenkins
If everything has been set up correctly, you should see an output like this:


Not secure
3.110.191.210:8080/login?from=%2F
Getting Started
Unlock Jenkins
To ensure Jenkins is securely set up by the administrator, a passw
the log (not sure where to find it?) and this file on the server:
/var/lib/jenkins/secrets/initialAdminPassword
Please copy the password from either location and paste it belo
Administrator password

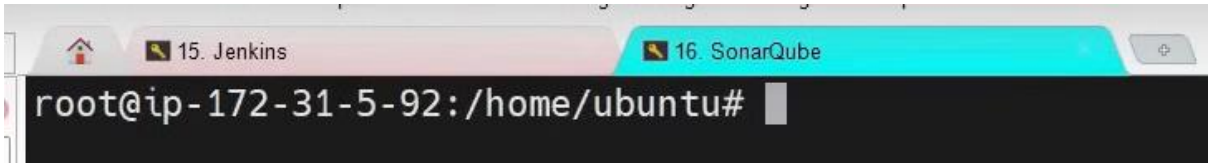


Installing sonarqube

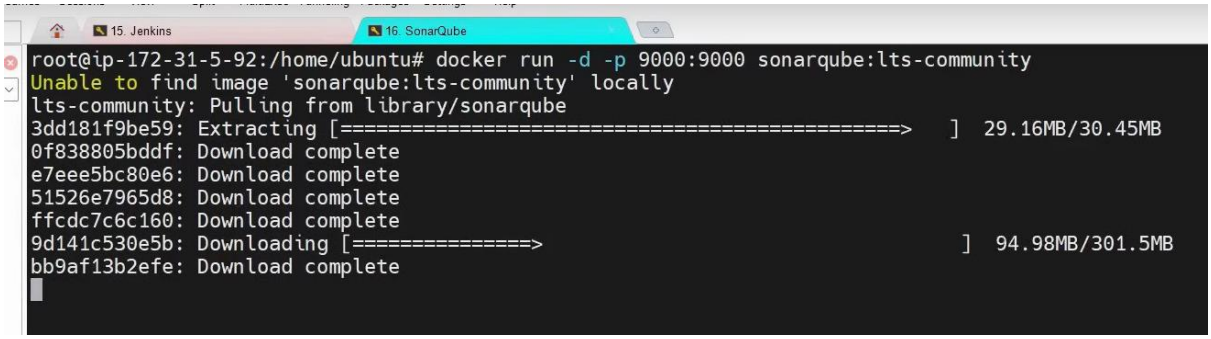



15. Jenkins
16. SonarQube
ubuntu@ip-172-31-5-92:~$ docker
Command 'docker' not found, but can be installed with:
sudo snap install docker # version 20.10.24, or
sudo apt install docker.io # version 24.0.5-0ubuntu1~20.04.1
See 'snap info docker' for additional versions.
ubuntu@ip-172-31-5-92:~$ sudo apt install docker.io -y

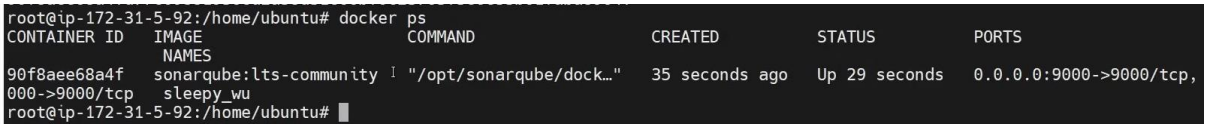
Sudo su – become root user



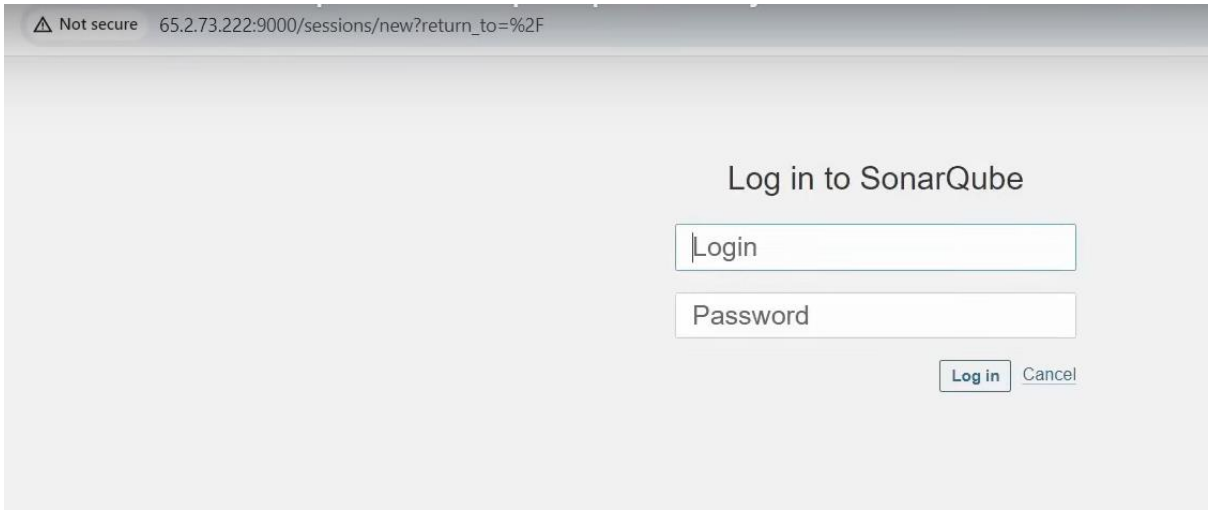
Installing sonaerqube through docker



Docker ps


root@ip-172-31-5-92:/home/ubuntu# docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS
NAMES
90f8aee68a4f sonarqube:lts-community "/opt/sonarqube/dock…" 35 seconds ago Up 29 seconds 0.0.0.0:9000->9000/tcp,
000->9000/tcp sleepy_wu
root@ip-172-31-5-92:/home/ubuntu#

Password -admin



Nexus installation

Sudo su – root user

Docker installation

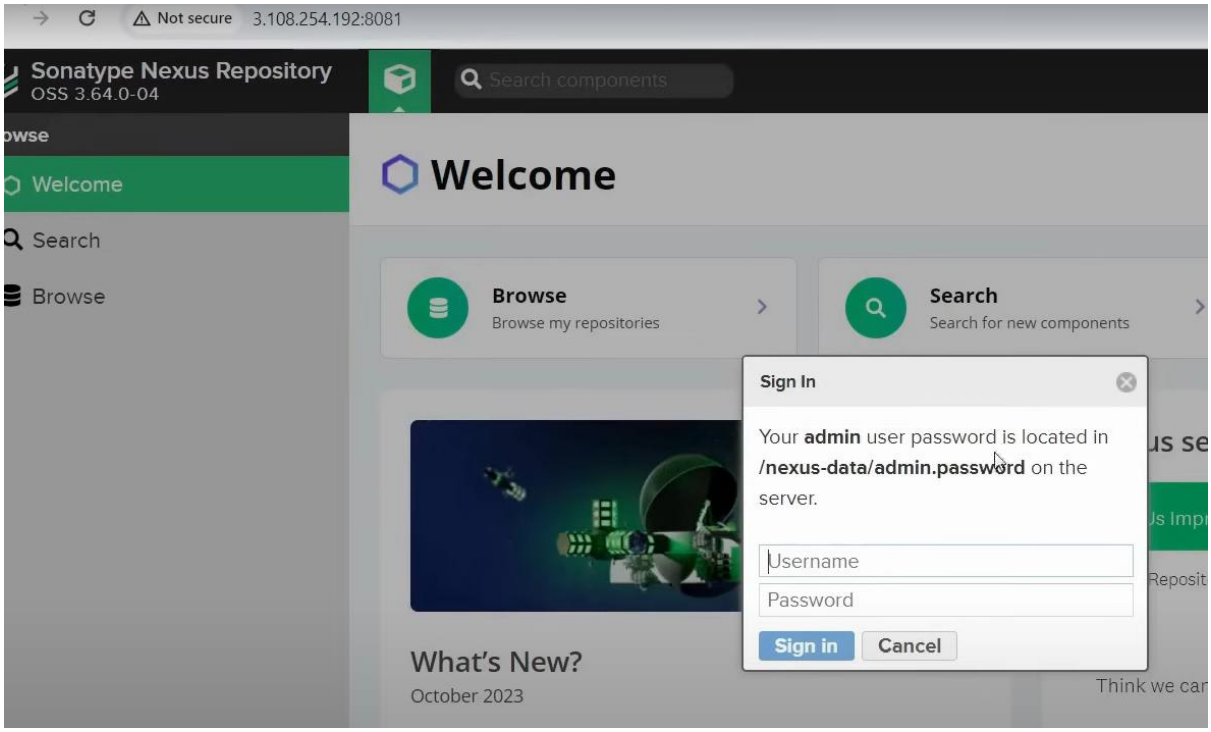
Sudo apt update

```
root@ip-172-31-13-220:/home/ubuntu# docker

Command 'docker' not found, but can be installed with:

snap install docker     # version 20.10.24, or
apt  install docker.io  # version 24.0.5-0ubuntu1~20.04.1

See 'snap info docker' for additional versions.

root@ip-172-31-13-220:/home/ubuntu# apt  install docker.io -y
Reading package lists... Done
Building dependency tree
Reading state information... Done
Package docker.io is not available, but is referred to by another package.
This may mean that the package is missing, has been obsoleted, or
is only available from another source

E: Package 'docker.io' has no installation candidate
root@ip-172-31-13-220:/home/ubuntu# sudo apt update
```

Nexus installation through docker image

```
root@ip-172-31-13-220:/home/ubuntu# docker run -d -p 8081:8081 sonatype/nexus3
Unable to find image 'sonatype/nexus3:latest' locally
latest: Pulling from sonatype/nexus3
736dd843e4bf: Downloading [>                                                  ]  375.1kB/37.02MB
edea3adfce2f: Pulling fs layer
12e0045f8deb: Verifying Checksum
5982dd44b987: Waiting
2d9ed93e480f: Waiting
3de9fe011680: Waiting
e3858902e106: Waiting
```

```
root@ip-172-31-13-220:/home/ubuntu# docker ps
CONTAINER ID   IMAGE             COMMAND                  CREATED         STATUS         PORTS
      NAMES
b29fa6677cee   sonatype/nexus3   "/opt/sonatype/nexus…"   9 seconds ago   Up 4 seconds   0.0.0.0:8081->8081/tcp,
tcp   strange_noyce
root@ip-172-31-13-220:/home/ubuntu# docker exec -it b29fa6677cee /bin/bash
bash-4.4$ ls
nexus  sonatype-work  start-nexus-repository-manager.sh
bash-4.4$
```

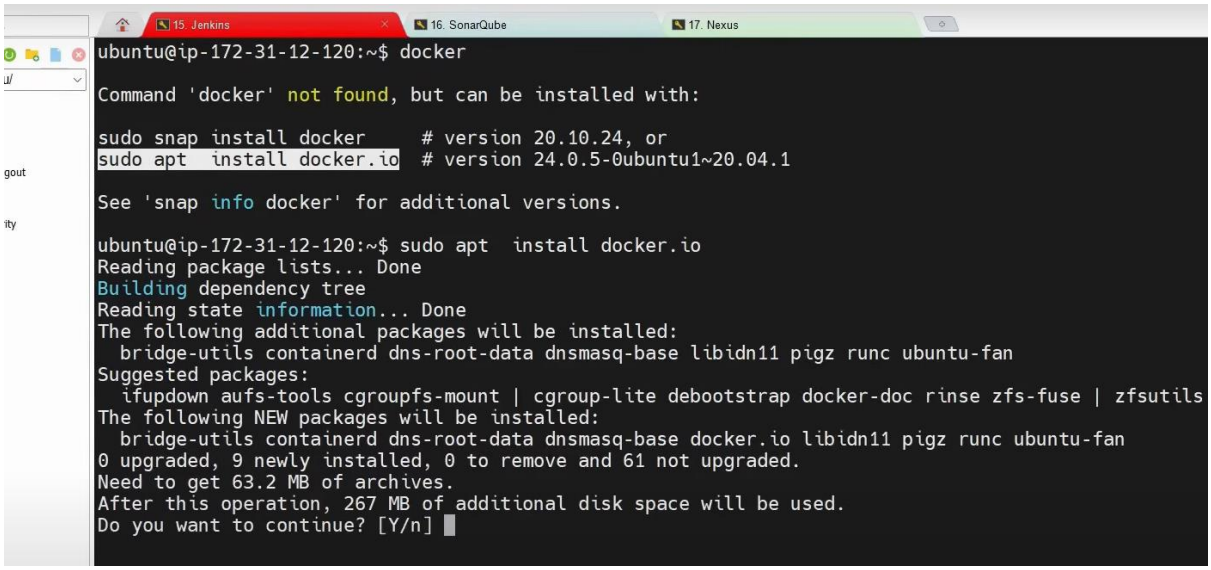


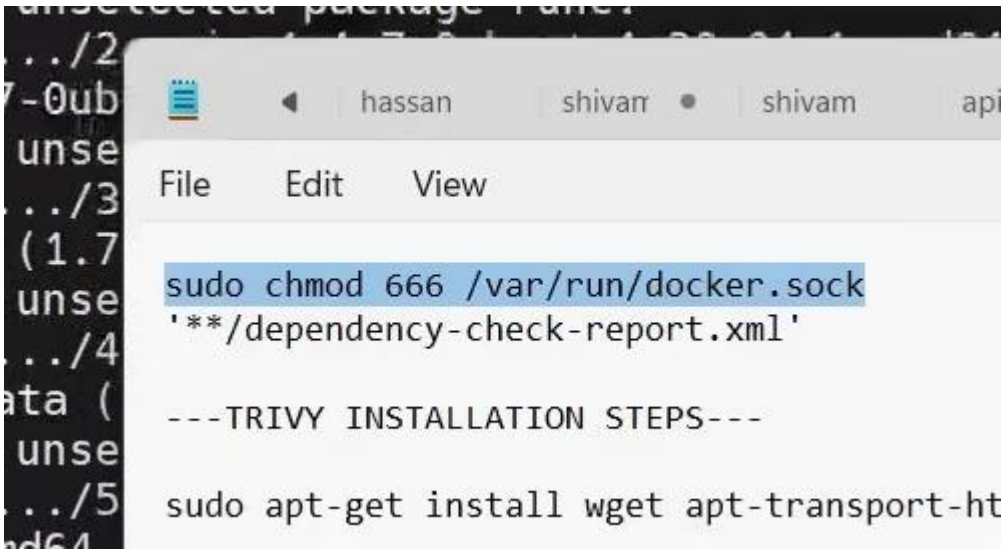
Extracting password

```
bash-4.4$ cd sonatype-work/
bash-4.4$ ls
nexus3
bash-4.4$ cd nexus3/
bash-4.4$ ls
admin.password  cache  elasticsearch  generated-bundles  javaprefs  keystores  log      port
blobs           db     etc            instances          karaf.pid  lock       orient   restor
bash-4.4$ cat admin.password
c3700982-d4e7-4bef-9b0e-a70849564acbbash-4.4$
```

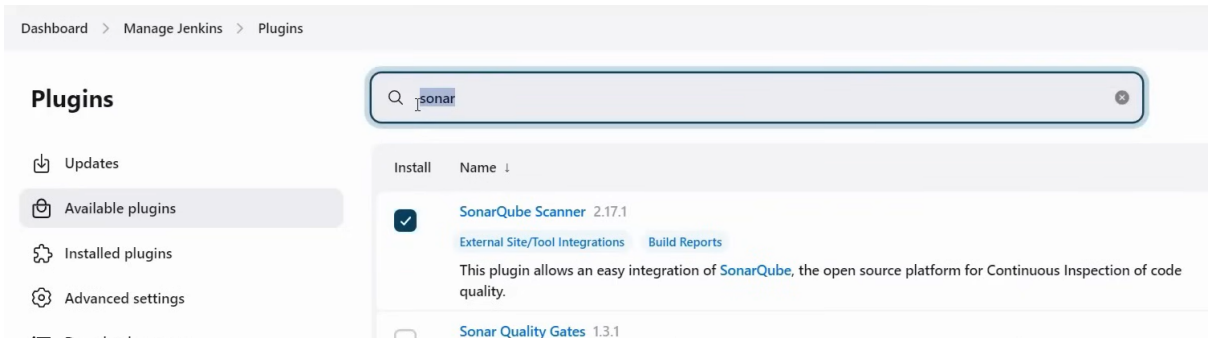
Exit to come out of bash

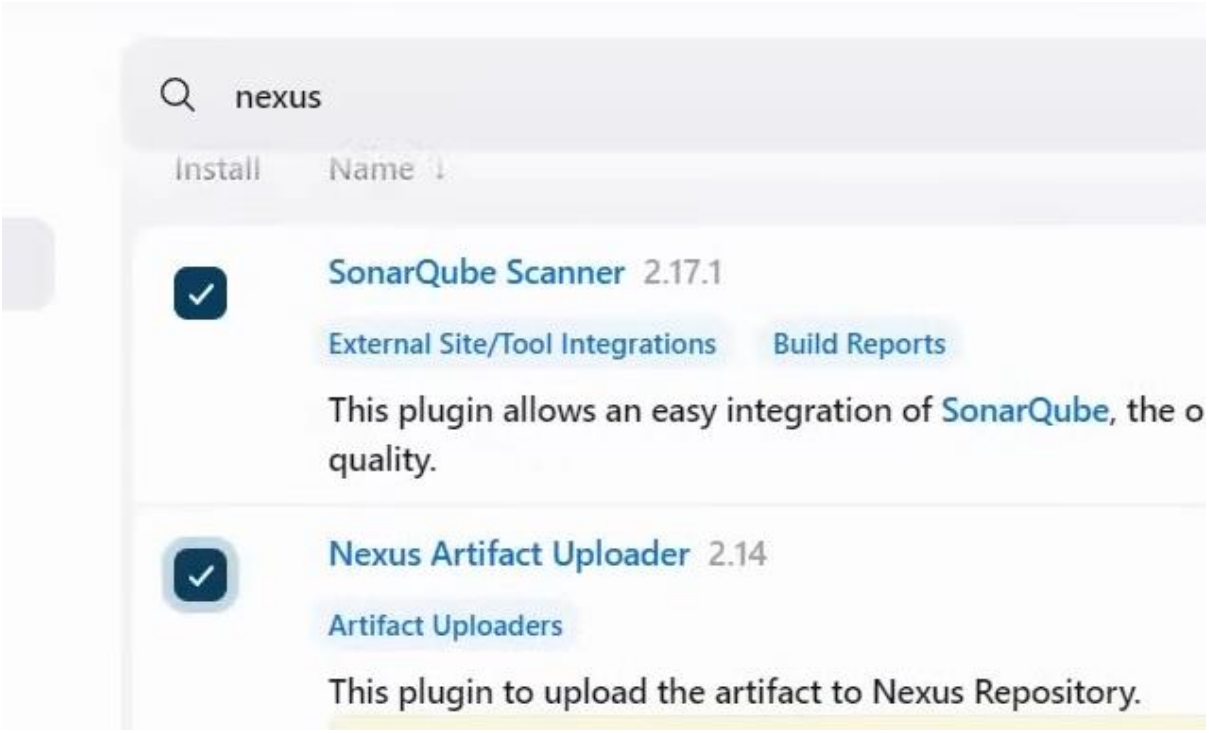
Installing docker on Jenkins


15. Jenkins
16. SonarQube
17. Nexus
ubuntu@ip-172-31-12-120:~$ docker
Command 'docker' not found, but can be installed with:
sudo snap install docker # version 20.10.24, or
sudo apt install docker.io # version 24.0.5-0ubuntu1~20.04.1
See 'snap info docker' for additional versions.
ubuntu@ip-172-31-12-120:~$ sudo apt install docker.io
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
bridge-utils containerd dns-root-data dnsmasq-base libidn11 pigz runc ubuntu-fan
Suggested packages:
ifupdown aufs-tools cgroupfs-mount | cgroup-lite debootstrap docker-doc rinse zfs-fuse | zfsutils
The following NEW packages will be installed:
bridge-utils containerd dns-root-data dnsmasq-base docker.io libidn11 pigz runc ubuntu-fan
0 upgraded, 9 newly installed, 0 to remove and 61 not upgraded.
Need to get 63.2 MB of archives.
After this operation, 267 MB of additional disk space will be used.
Do you want to continue? [Y/n]



Plugins installation





Docker

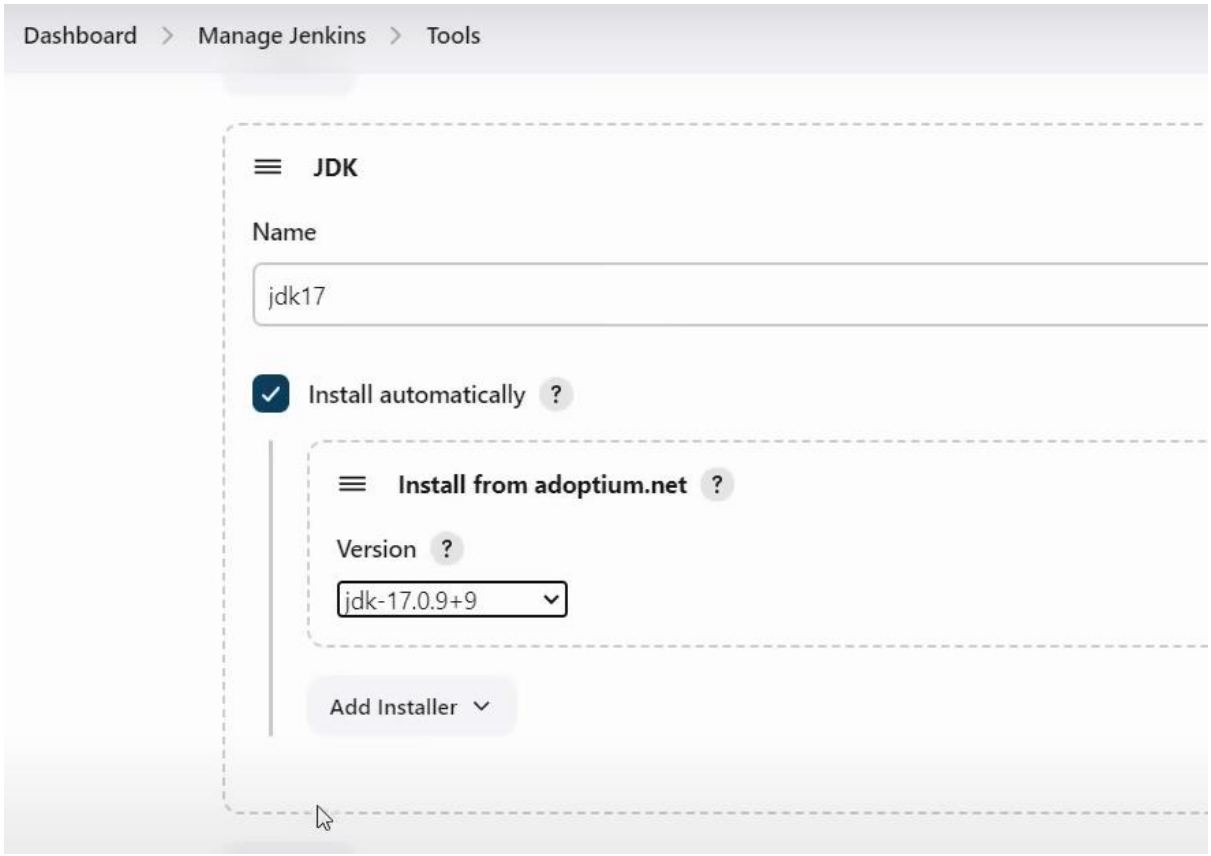
Docker pipeline

Docker bees docker build and push

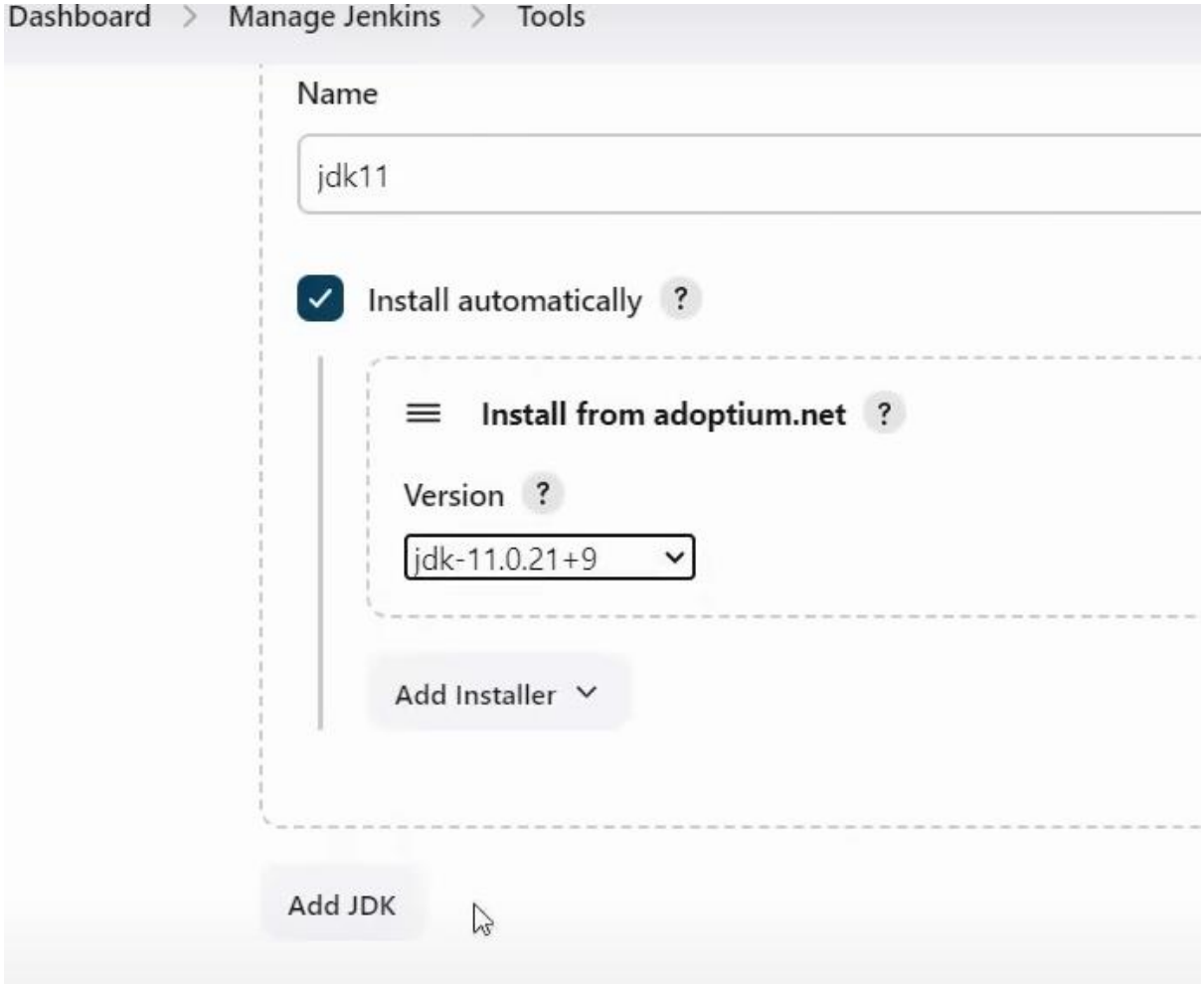
Owasp dependency check

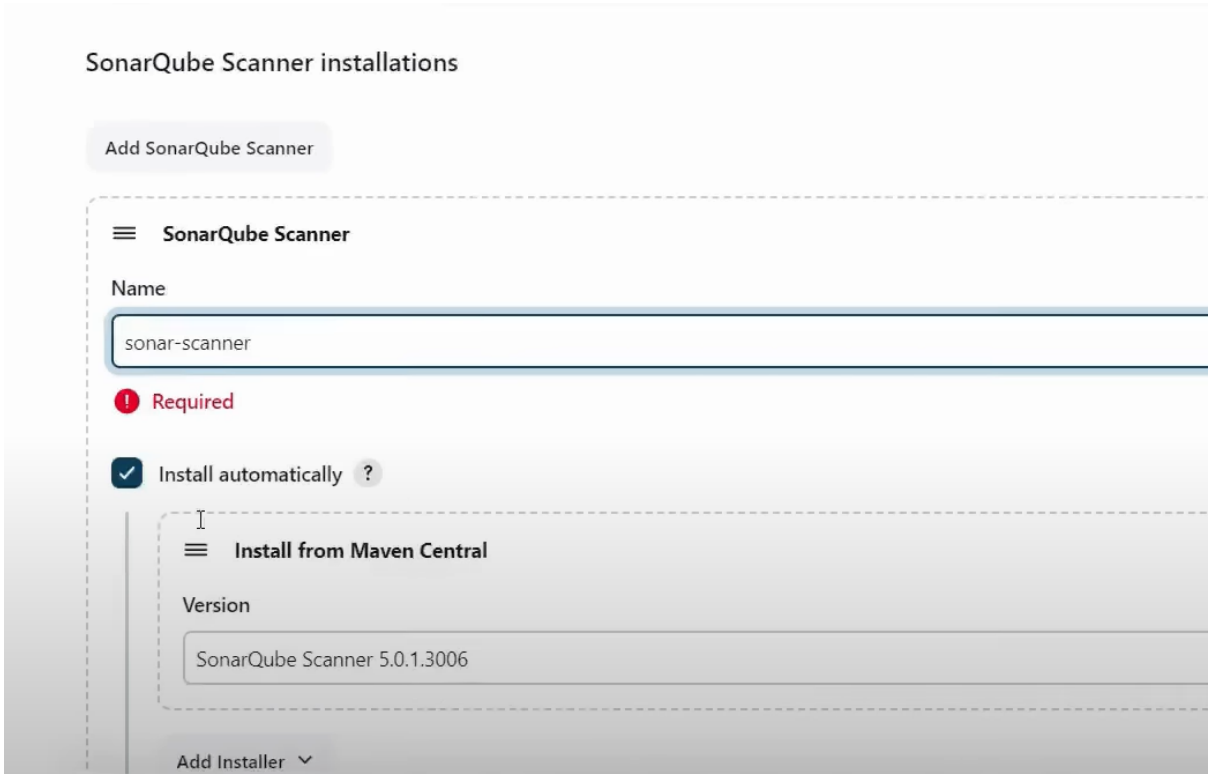
Eclipse temurin installer

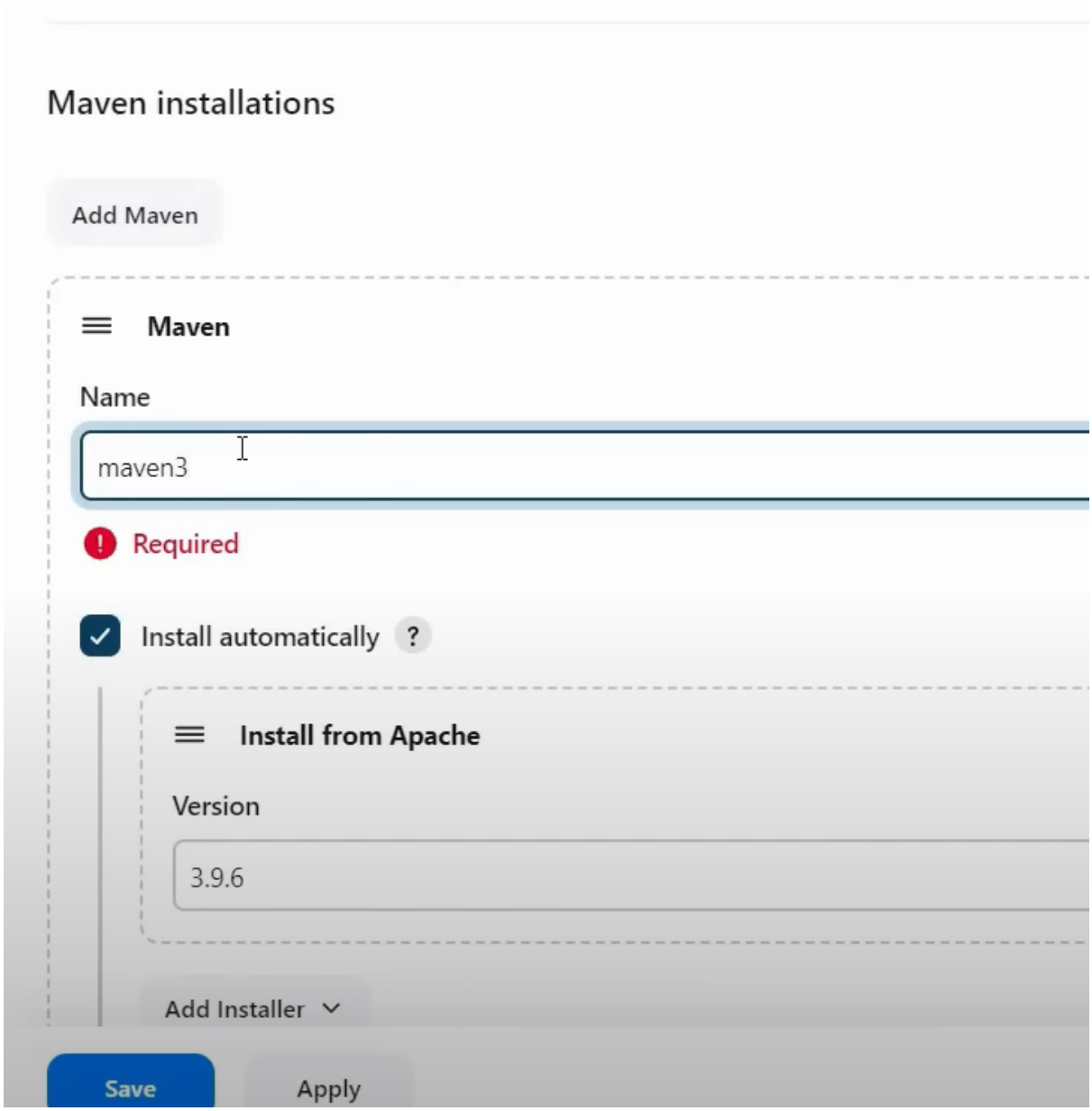
Tools installation

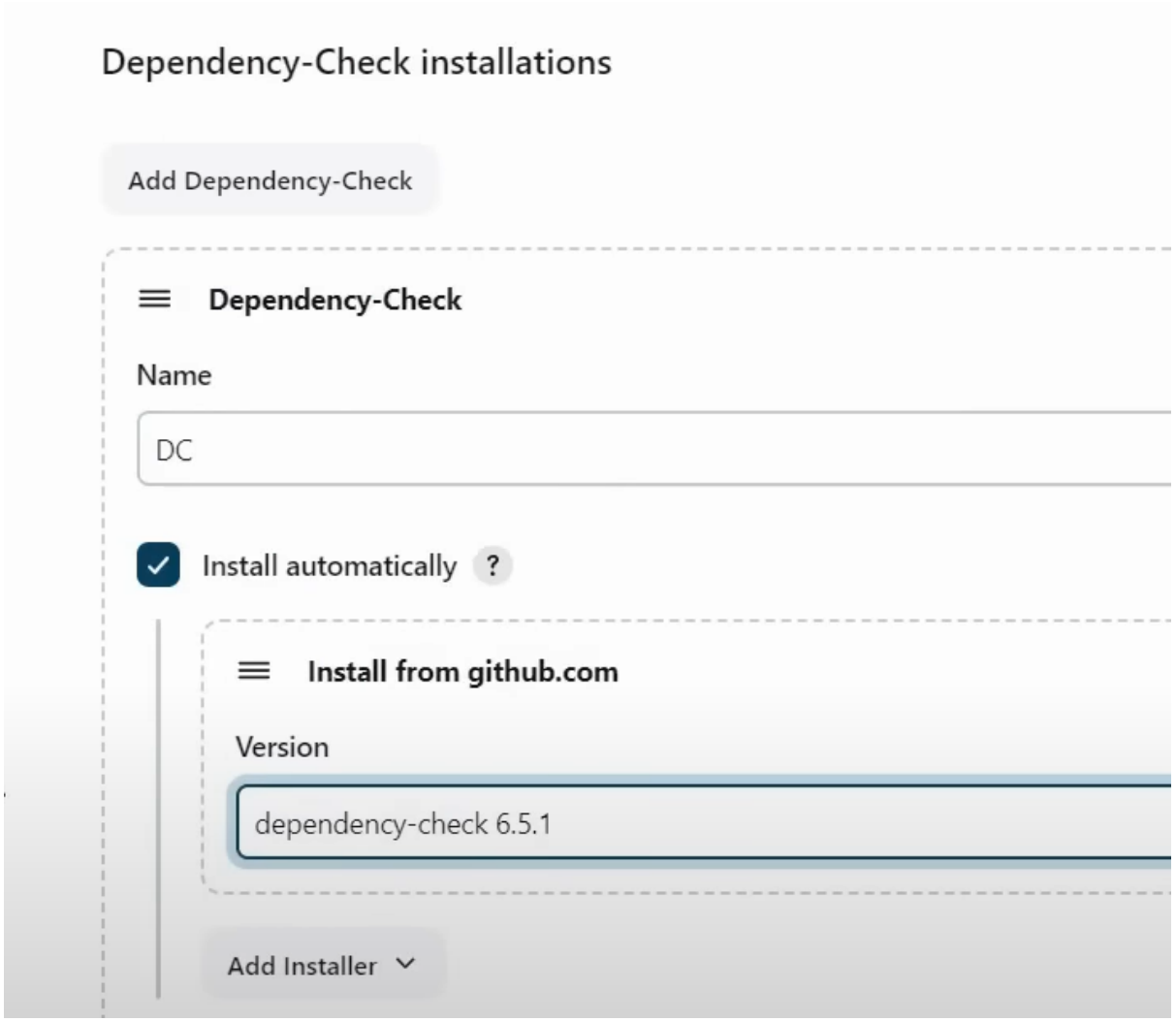


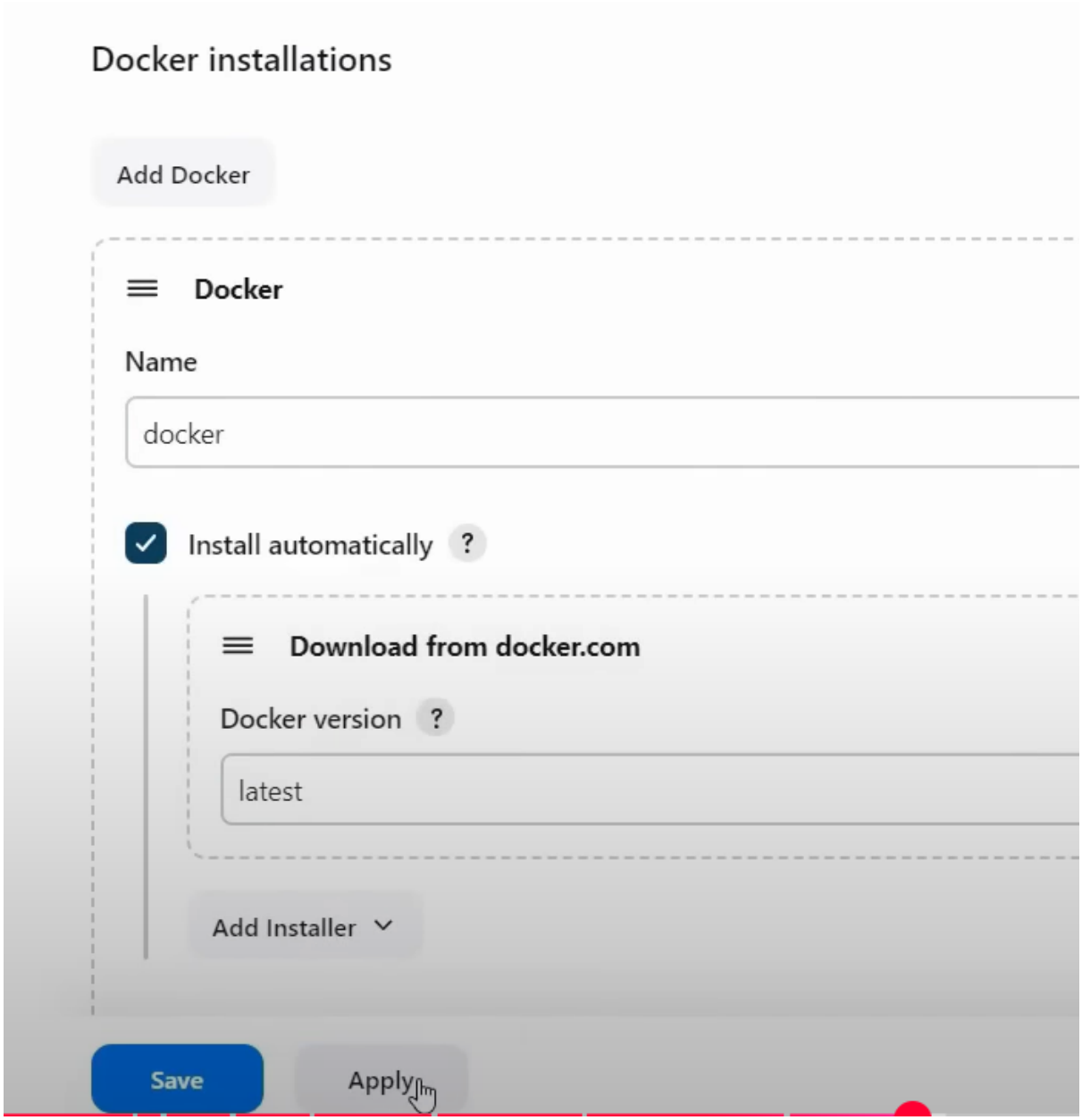
If jdk17 not work

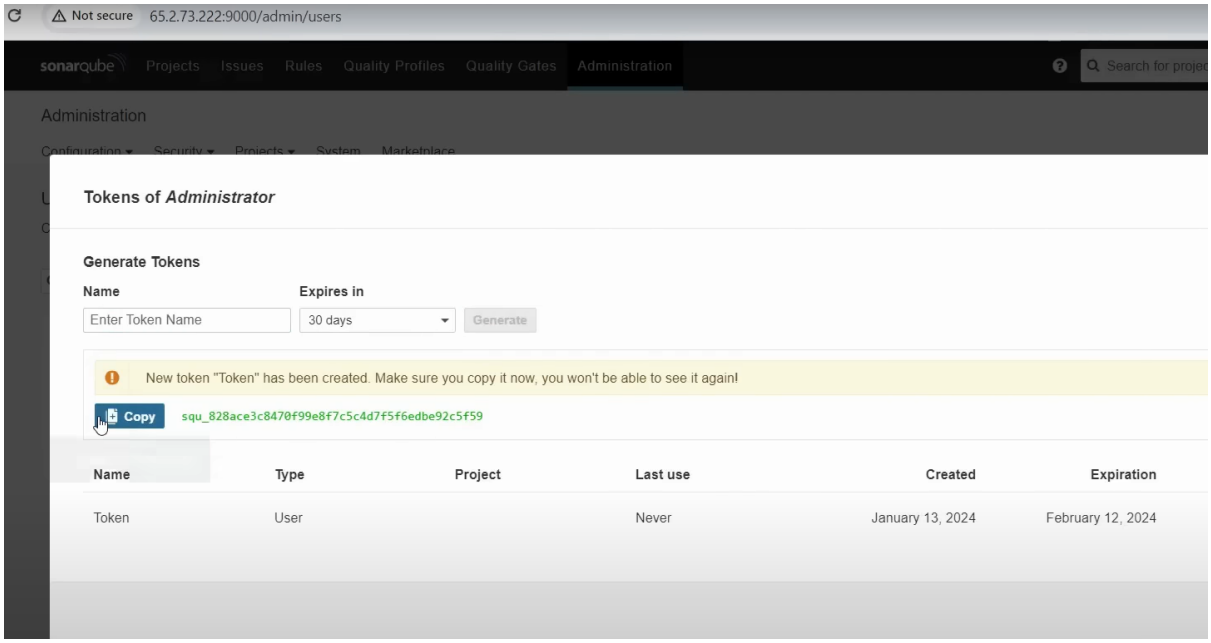

Dashboard > Manage Jenkins > Tools
Name
jdk11
Install automatically
Install from adoptium.net
Version
jdk-11.0.21+9
Add Installer
Add JDK

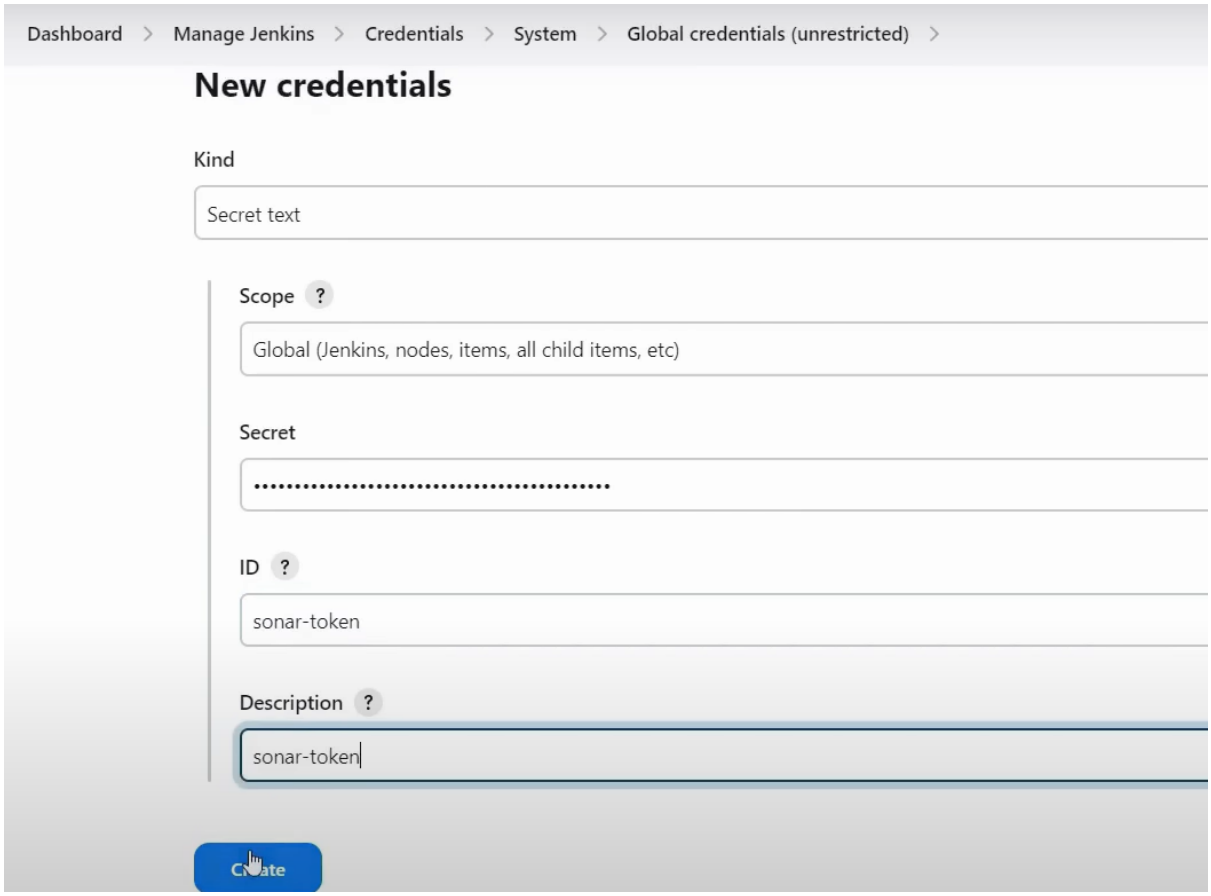

SonarQube Scanner installations
Add SonarQube Scanner
SonarQube Scanner
Name
sonar-scanner
Required
Install automatically
Install from Maven Central
Version
SonarQube Scanner 5.0.1.3006
Add Installer

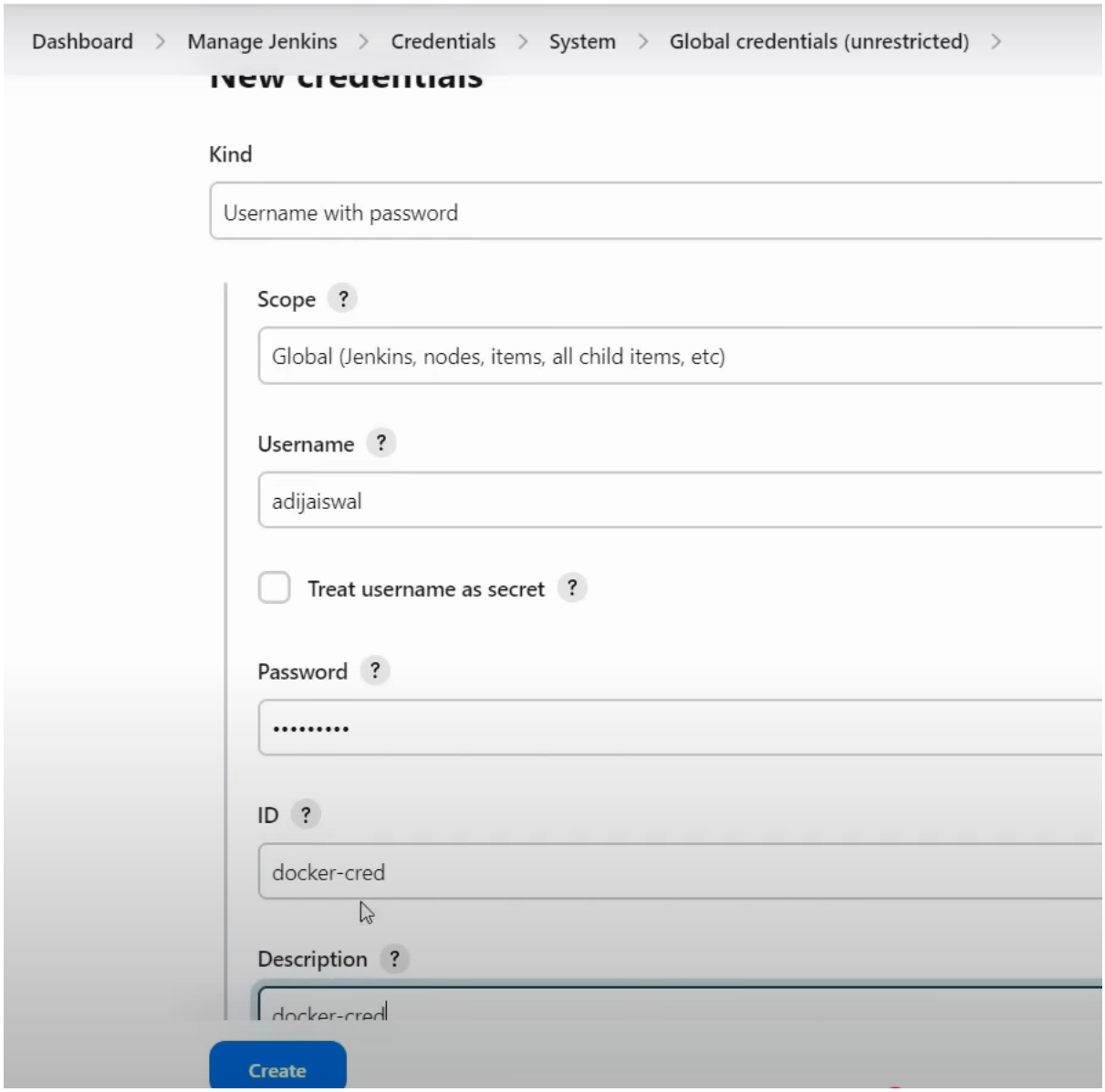

Maven installations
Add Maven
Maven
Name
maven3
Required
Install automatically
Install from Apache
Version
3.9.6
Add Installer
Save
Apply

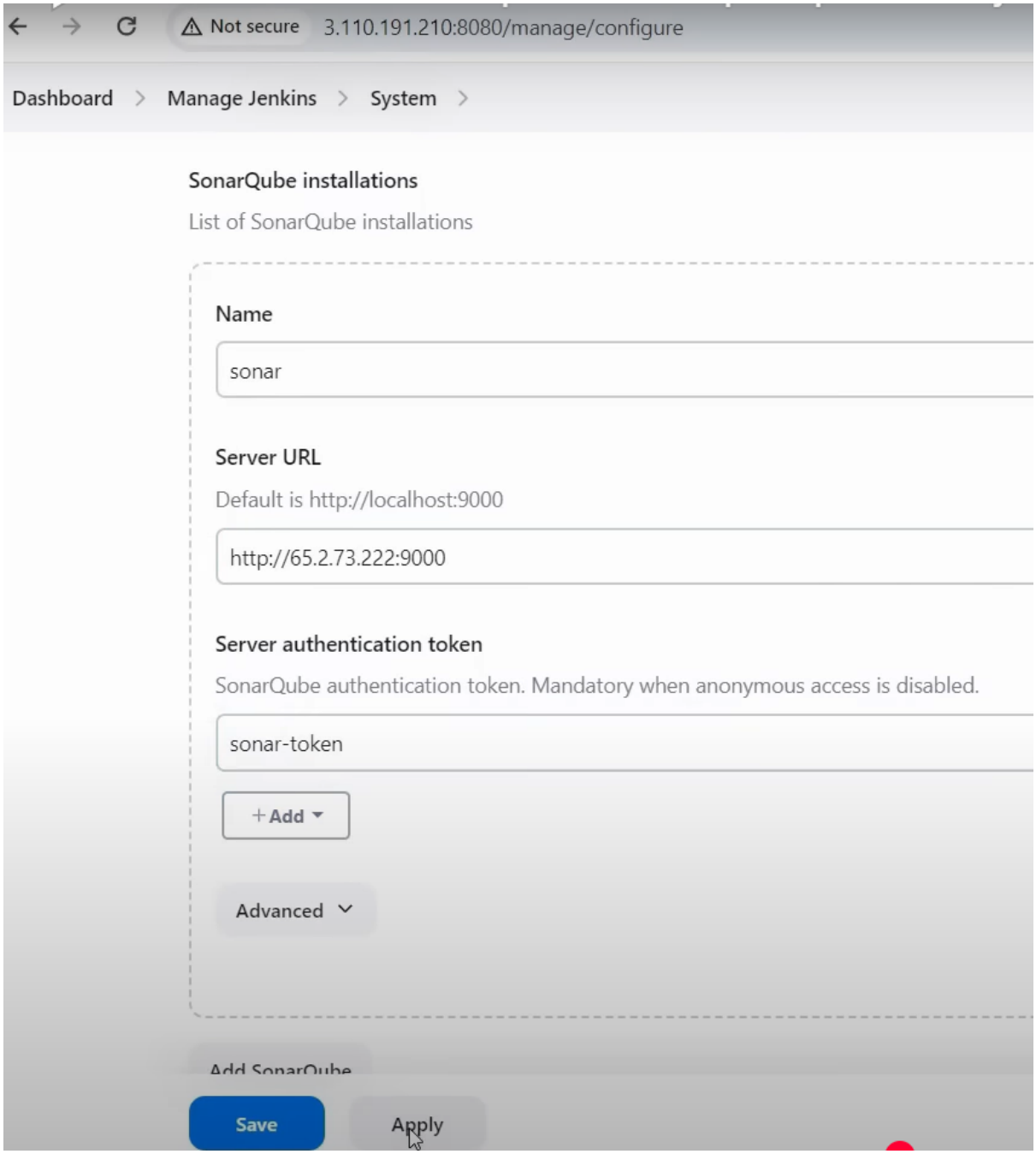

Dependency-Check installations
Add Dependency-Check
Dependency-Check
Name
DC
Install automatically
?
Install from github.com
Version
dependency-check 6.5.1
Add Installer

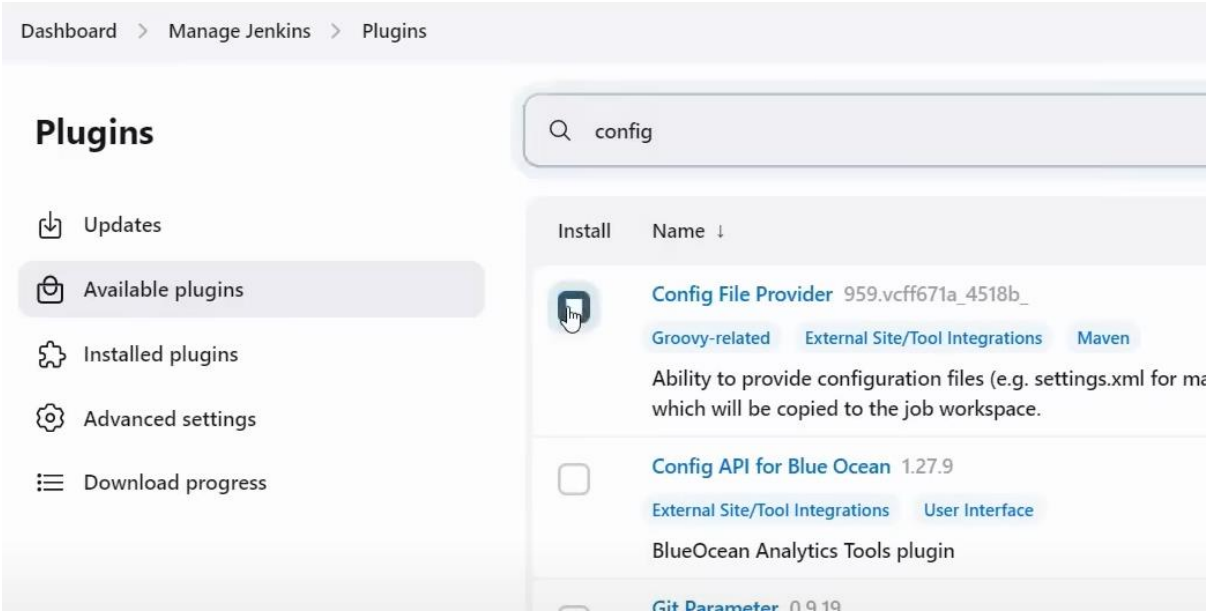

Docker installations
Add Docker
Docker
Name
docker
Install automatically
Download from docker.com
Docker version
latest
Add Installer
Save
Apply

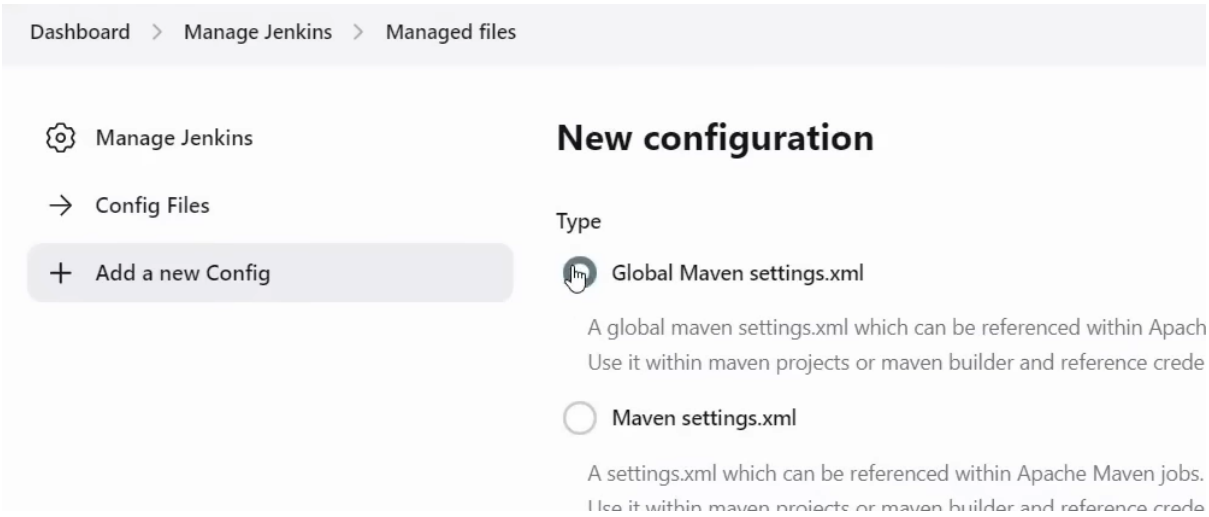

Not secure
65.2.73.222:9000/admin/users
sonarqube
Projects
Issues
Rules
Quality Profiles
Quality Gates
Administration
Search for projec
Administration
Configuration
Security
Projects
System
Marketplace
Tokens of Administrator
Generate Tokens
Name
Expires in
Enter Token Name
30 days
Generate
New token "Token" has been created. Make sure you copy it now, you won't be able to see it again!
Copy
squ_828ace3c8470f99e8f7c5c4d7f5f6edbe92c5f59
Name
Type
Project
Last use
Created
Expiration
Token
User
Never
January 13, 2024
February 12, 2024

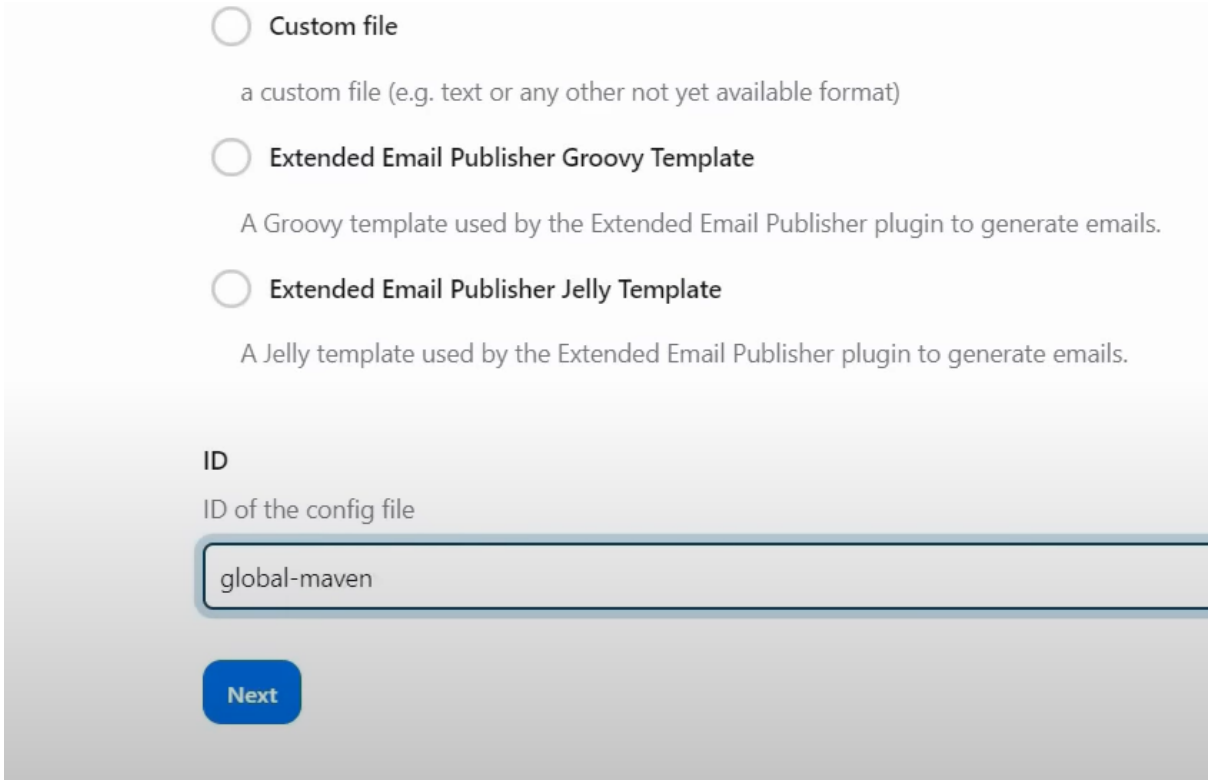

Dashboard
Manage Jenkins
Credentials
System
Global credentials (unrestricted)
New credentials
Kind
Secret text
Scope
Global (Jenkins, nodes, items, all child items, etc)
Secret
ID
sonar-token
Description
sonar-token
Create

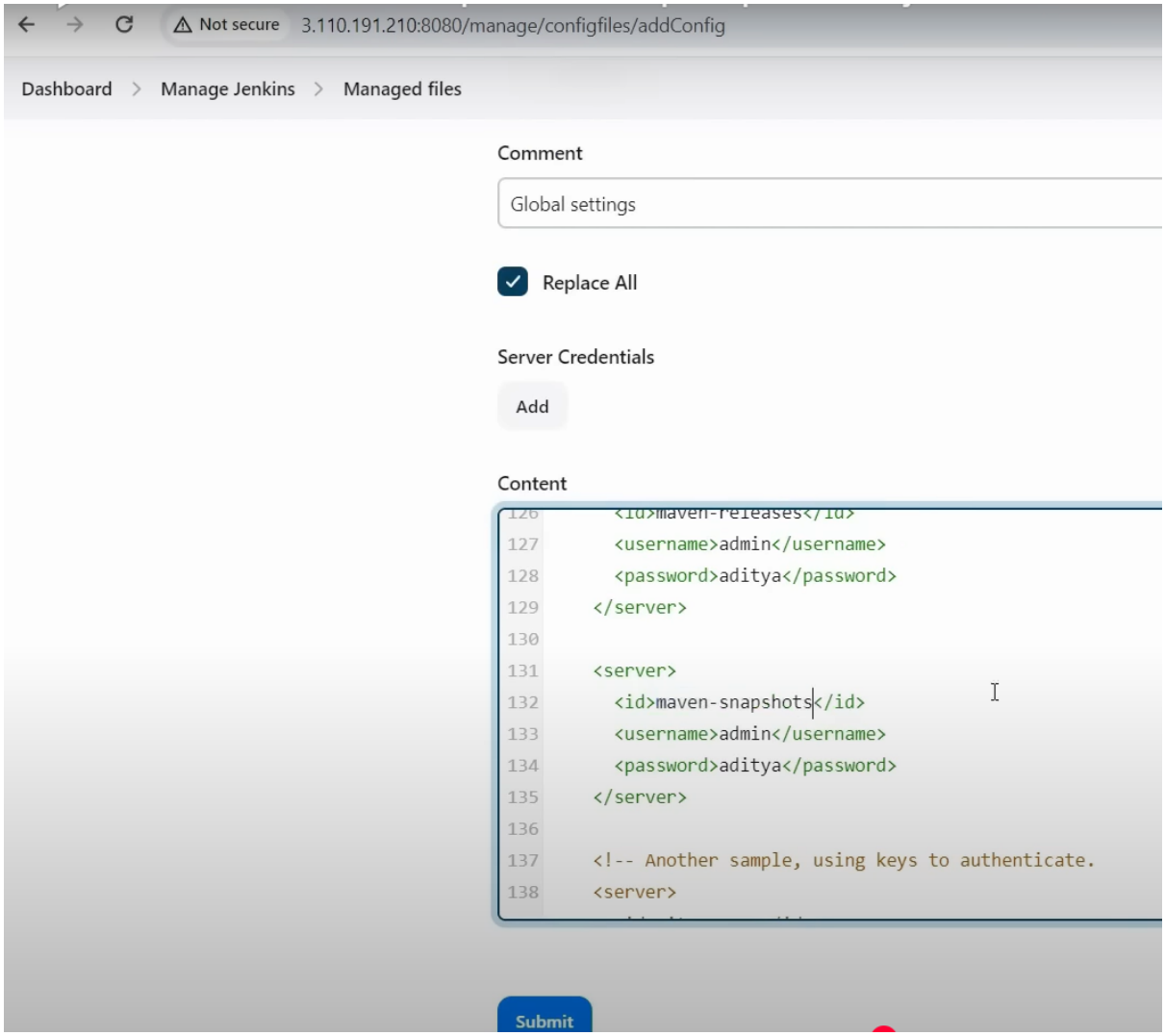

Dashboard > Manage Jenkins > Credentials > System > Global credentials (unrestricted) >
New credentials
Kind
Username with password
Scope ?
Global (Jenkins, nodes, items, all child items, etc)
Username ?
adijaiswal
Treat username as secret ?
Password ?
••••••••
ID ?
docker-cred
Description ?
docker-cred
Create

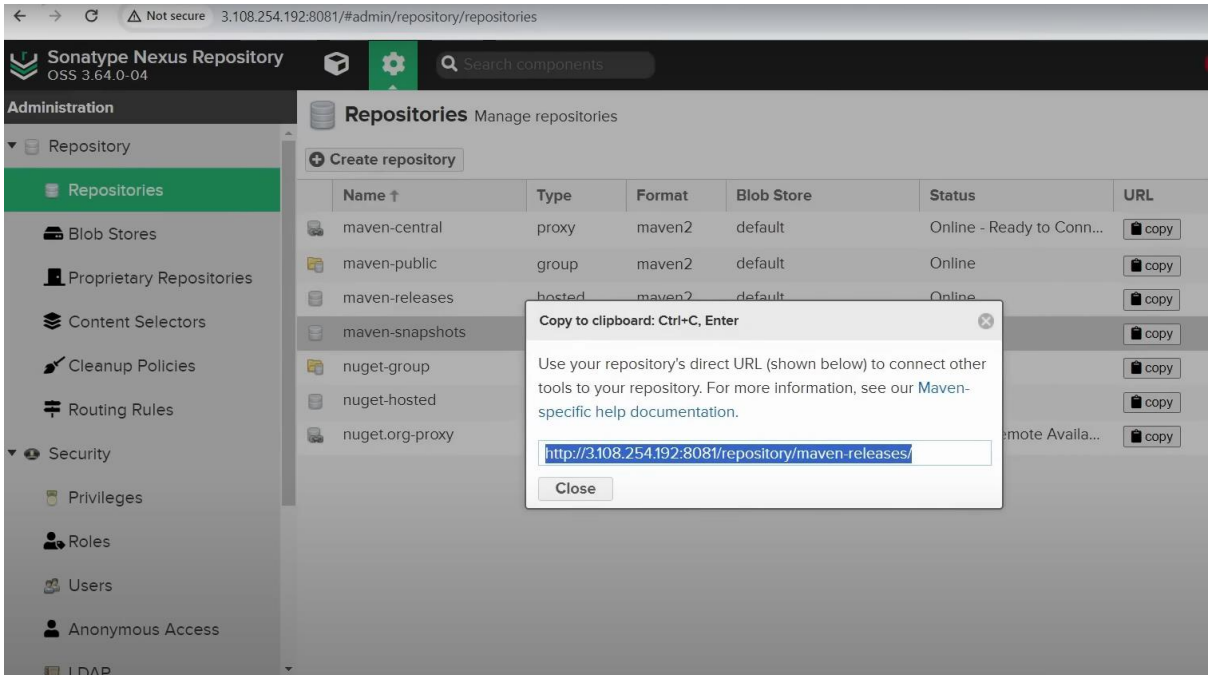

Not secure
3.110.191.210:8080/manage/configure
Dashboard
Manage Jenkins
System
SonarQube installations
List of SonarQube installations
Name
sonar
Server URL
Default is http://localhost:9000
http://65.2.73.222:9000
Server authentication token
SonarQube authentication token. Mandatory when anonymous access is disabled.
sonar-token
+ Add
Advanced
Add SonarQube
Save
Apply

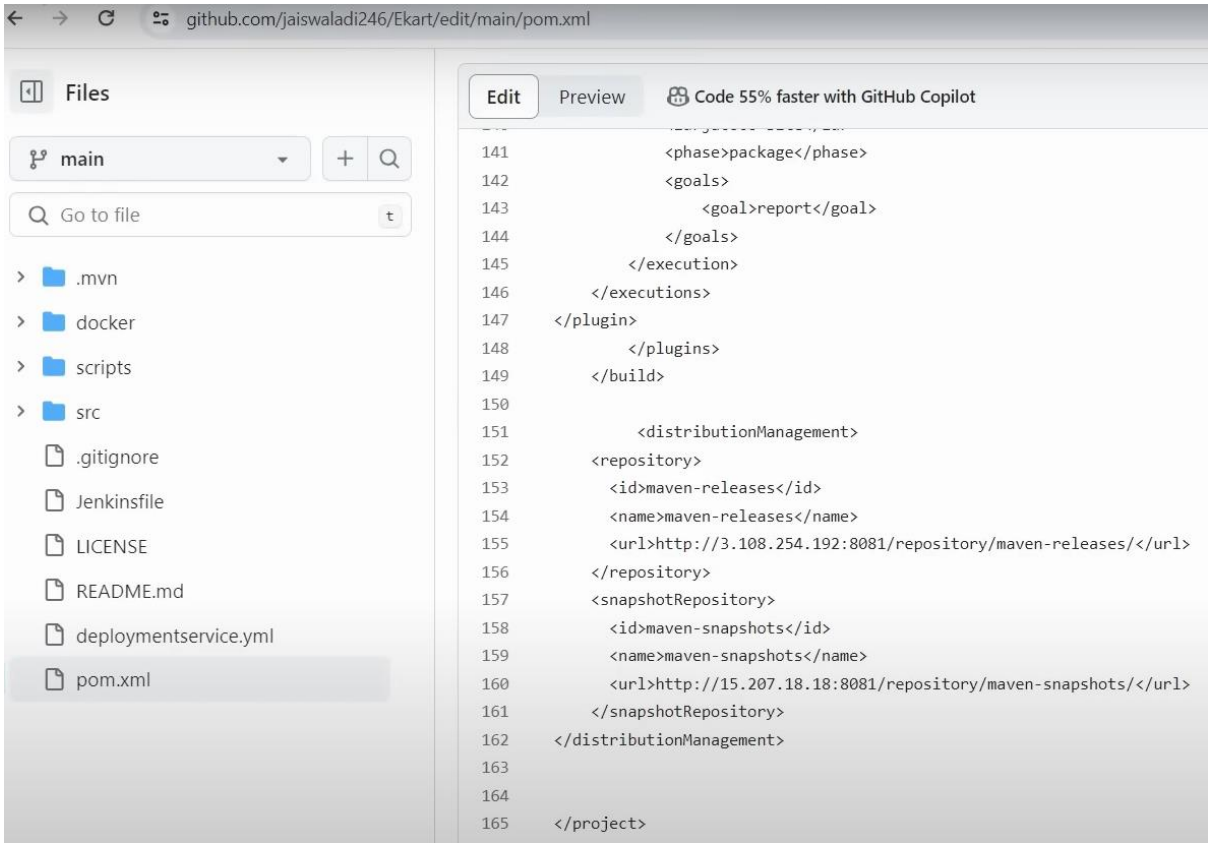

Dashboard > Manage Jenkins > Plugins
Plugins
config
Updates
Available plugins
Installed plugins
Advanced settings
Download progress
Install
Name ↓
Config File Provider 959.vcff671a_4518b_
Groovy-related
External Site/Tool Integrations
Maven
Ability to provide configuration files (e.g. settings.xml for ma
which will be copied to the job workspace.
Config API for Blue Ocean 1.27.9
External Site/Tool Integrations
User Interface
BlueOcean Analytics Tools plugin

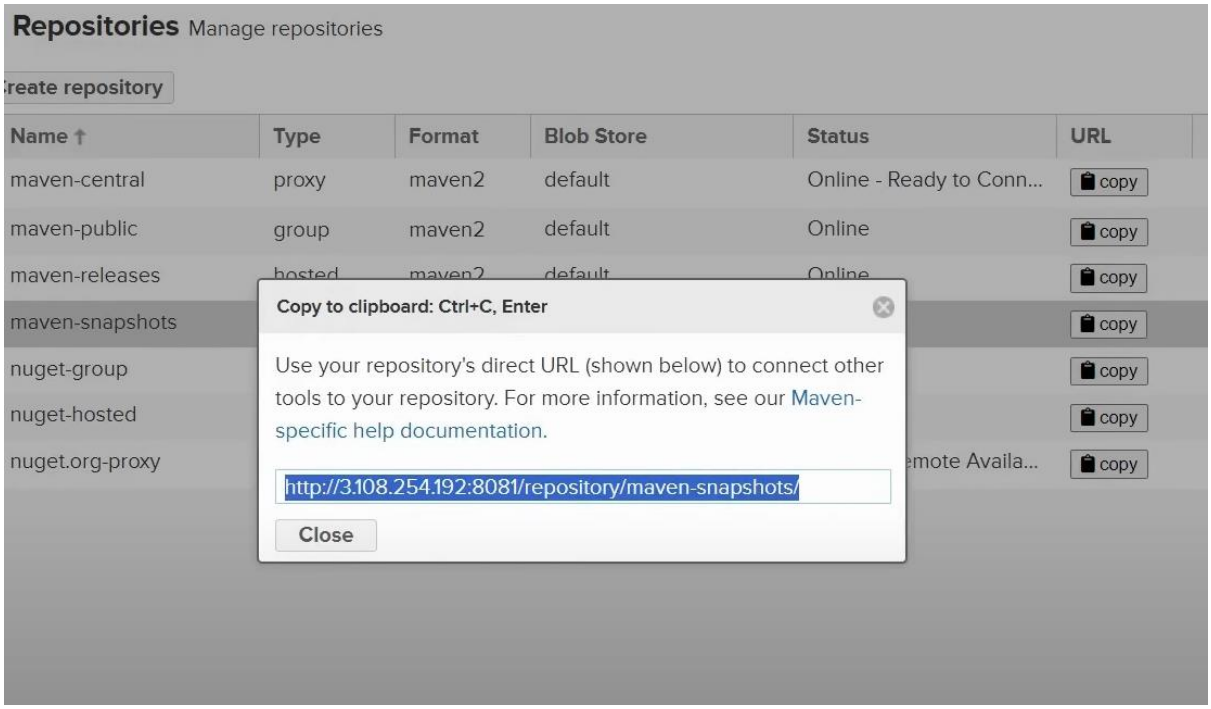

Dashboard > Manage Jenkins > Managed files
Manage Jenkins
Config Files
Add a new Config
New configuration
Type
Global Maven settings.xml
A global maven settings.xml which can be referenced within Apach
Use it within maven projects or maven builder and reference crede
Maven settings.xml
A settings.xml which can be referenced within Apache Maven jobs.

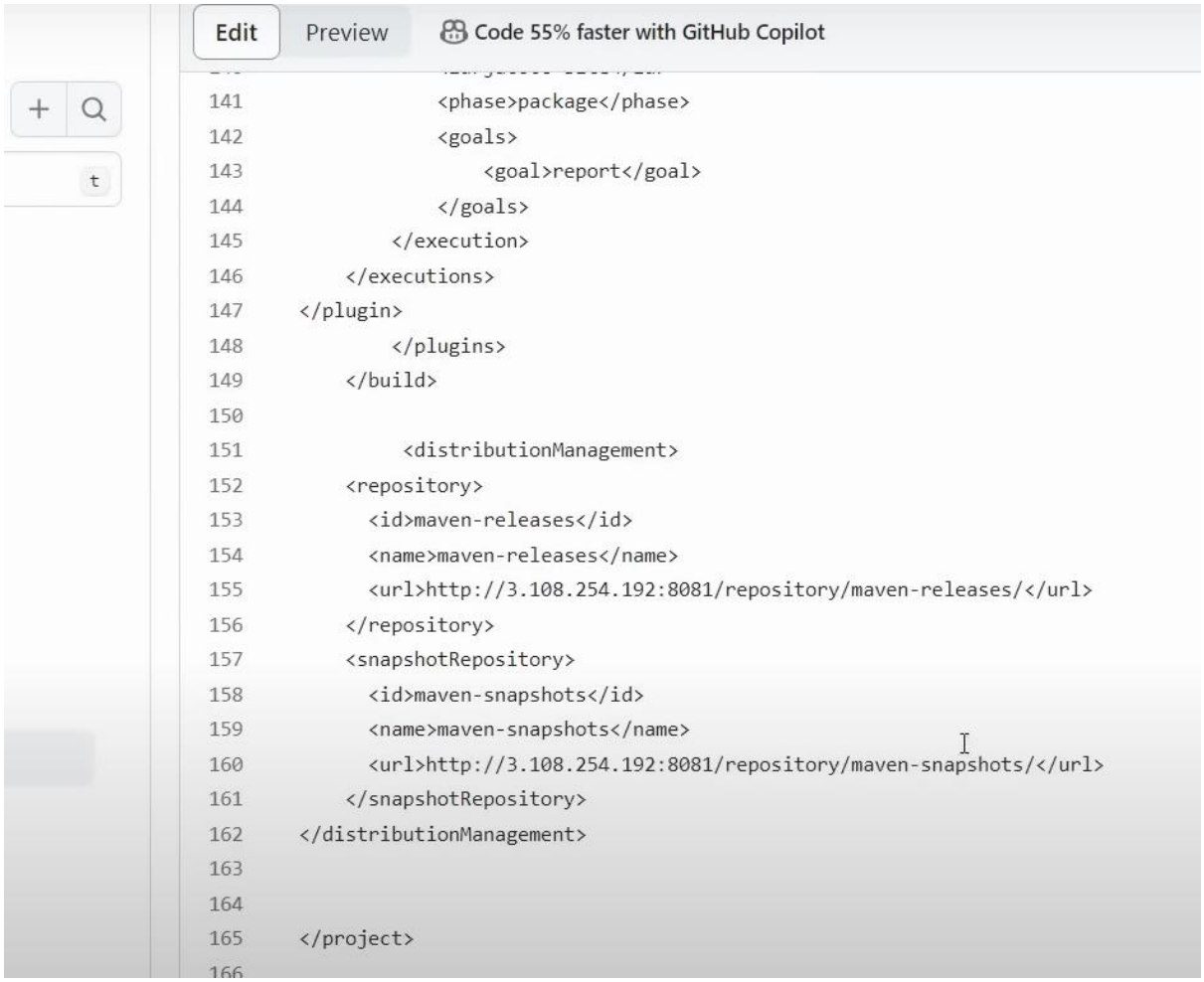

Custom file
a custom file (e.g. text or any other not yet available format)
Extended Email Publisher Groovy Template
A Groovy template used by the Extended Email Publisher plugin to generate emails.
Extended Email Publisher Jelly Template
A Jelly template used by the Extended Email Publisher plugin to generate emails.
ID
ID of the config file
global-maven
Next


Not secure
3.110.191.210:8080/manage/configfiles/addConfig
Dashboard
Manage Jenkins
Managed files
Comment
Global settings
Replace All
Server Credentials
Add
Content
<id>maven-releases</id>
<username>admin</username>
<password>aditya</password>
</server>
<server>
<id>maven-snapshots</id>
<username>admin</username>
<password>aditya</password>
</server>
<!-- Another sample, using keys to authenticate.
<server>
Submit

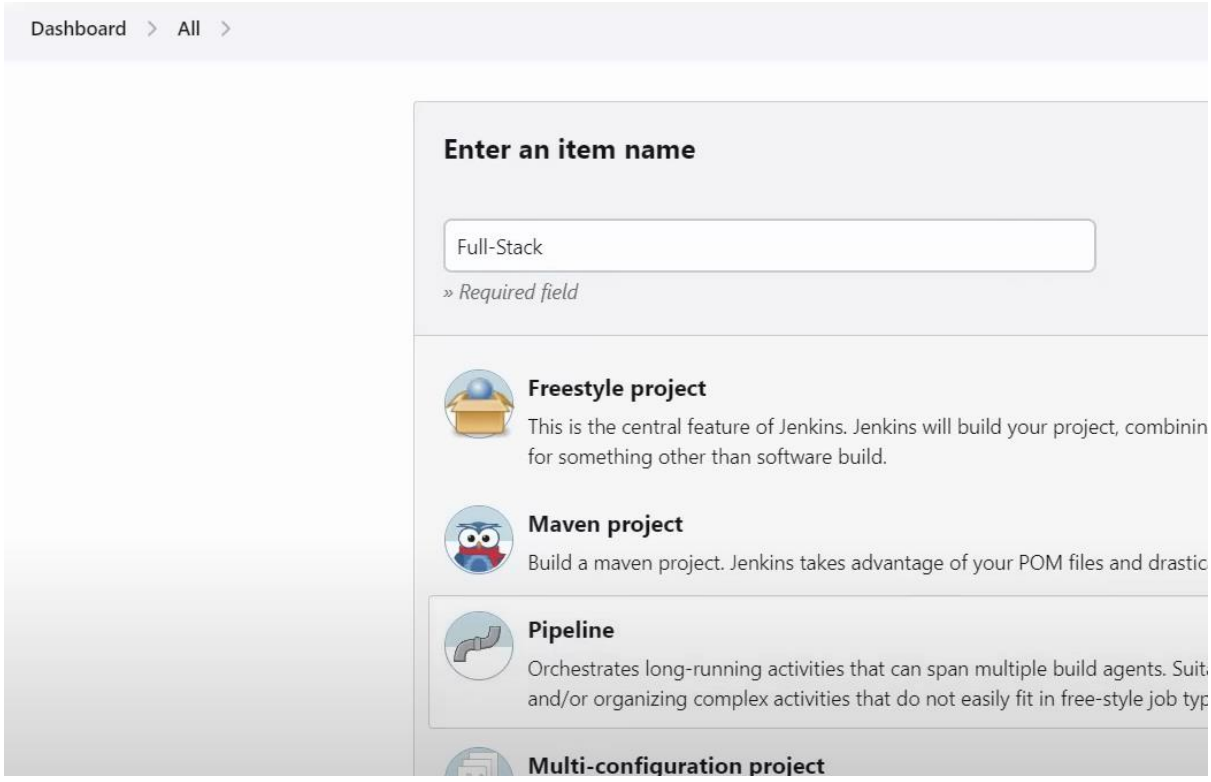

Not secure
3.108.254.192:8081/#admin/repository/repositories
Sonatype Nexus Repository
OSS 3.64.0-04
Search components
Administration
Repository
Repositories
Blob Stores
Proprietary Repositories
Content Selectors
Cleanup Policies
Routing Rules
Security
Privileges
Roles
Users
Anonymous Access
Repositories
Manage repositories
Create repository
Name
Type
Format
Blob Store
Status
URL
maven-central
proxy
maven2
default
Online - Ready to Conn...
copy
maven-public
group
maven2
default
Online
copy
maven-releases
copy
maven-snapshots
copy
nuget-group
copy
nuget-hosted
copy
nuget.org-proxy
copy
Copy to clipboard: Ctrl+C, Enter
Use your repository's direct URL (shown below) to connect other tools to your repository. For more information, see our Maven-specific help documentation.
http://3.108.254.192:8081/repository/maven-releases/
Close

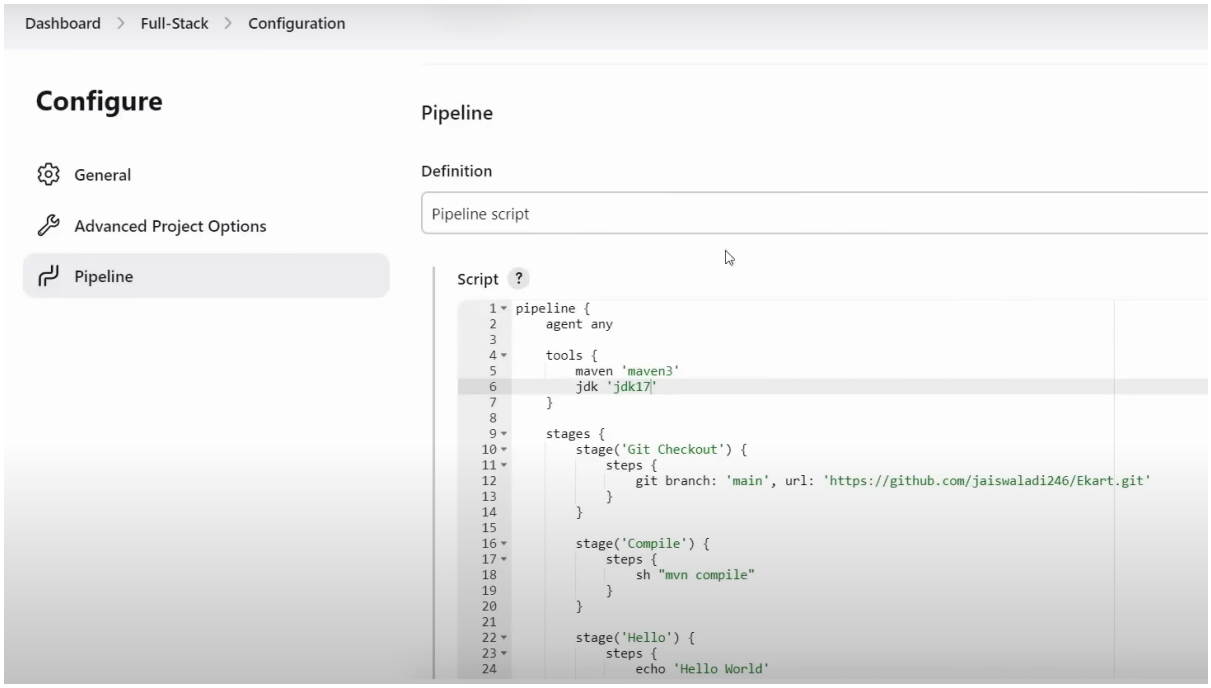

github.com/jaiswaladi246/Ekart/edit/main/pom.xml
Files
main
Go to file
t
.mvn
docker
scripts
src
.gitignore
Jenkinsfile
LICENSE
README.md
deploymentservice.yml
pom.xml
Edit
Preview
Code 55% faster with GitHub Copilot
141 <phase>package</phase>
142 <goals>
143 <goal>report</goal>
144 </goals>
145 </execution>
146 </executions>
147 </plugin>
148 </plugins>
149 </build>
150
151 <distributionManagement>
152 <repository>
153 <id>maven-releases</id>
154 <name>maven-releases</name>
155 <url>http://3.108.254.192:8081/repository/maven-releases/</url>
156 </repository>
157 <snapshotRepository>
158 <id>maven-snapshots</id>
159 <name>maven-snapshots</name>
160 <url>http://15.207.18.18:8081/repository/maven-snapshots/</url>
161 </snapshotRepository>
162 </distributionManagement>
163
164
165 </project>

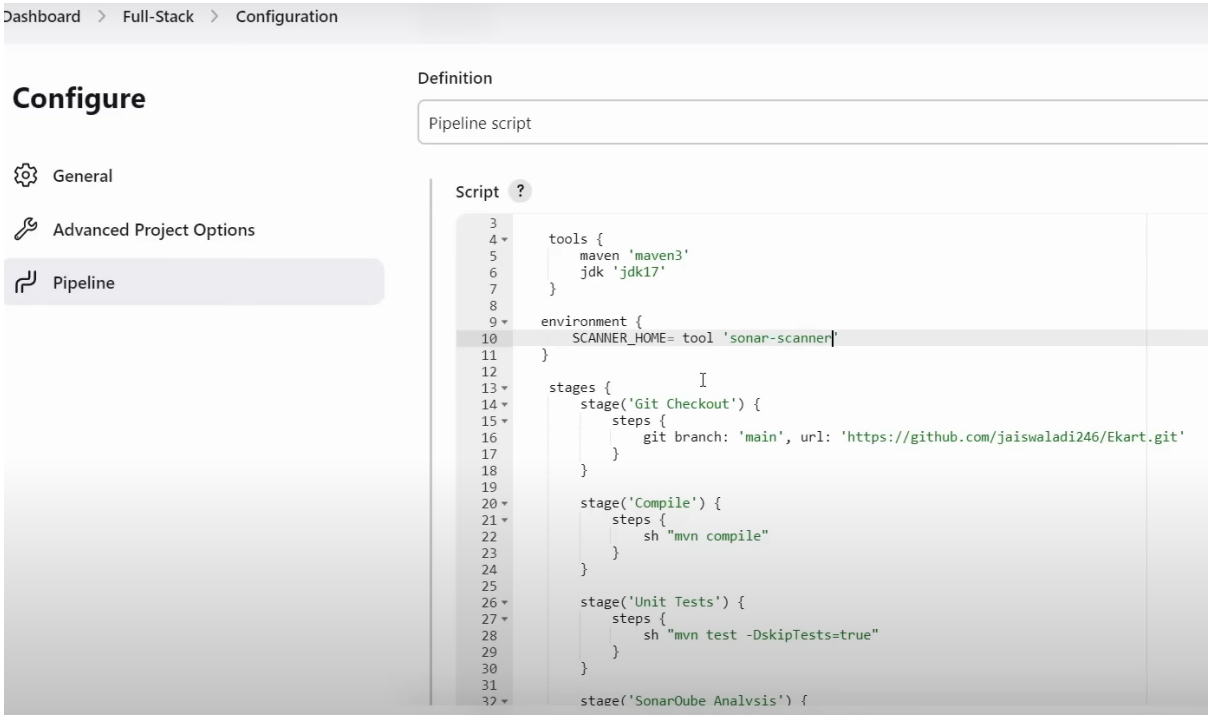

Repositories Manage repositories
reate repository
Name
Type
Format
Blob Store
Status
URL
maven-central proxy maven2 default Online - Ready to Conn... copy
maven-public group maven2 default Online copy
maven-releases copy
maven-snapshots copy
nuget-group copy
nuget-hosted copy
nuget.org-proxy copy
Copy to clipboard: Ctrl+C, Enter
Use your repository's direct URL (shown below) to connect other tools to your repository. For more information, see our Maven-specific help documentation.
http://3.108.254.192:8081/repository/maven-snapshots/
Close



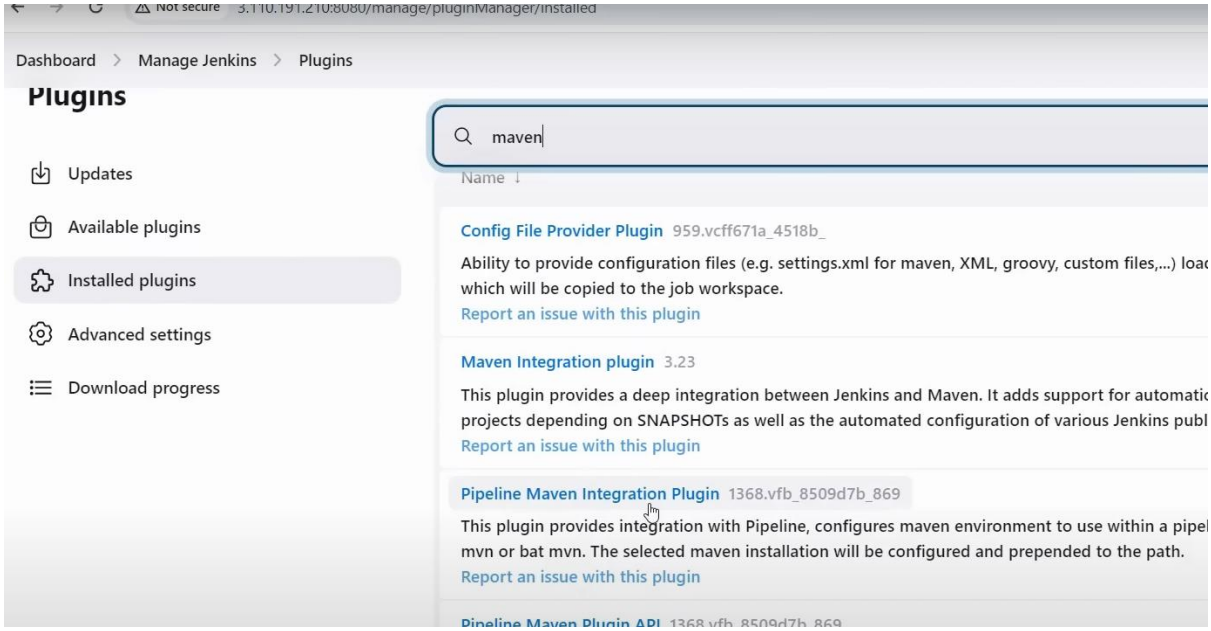
Creating pipeline

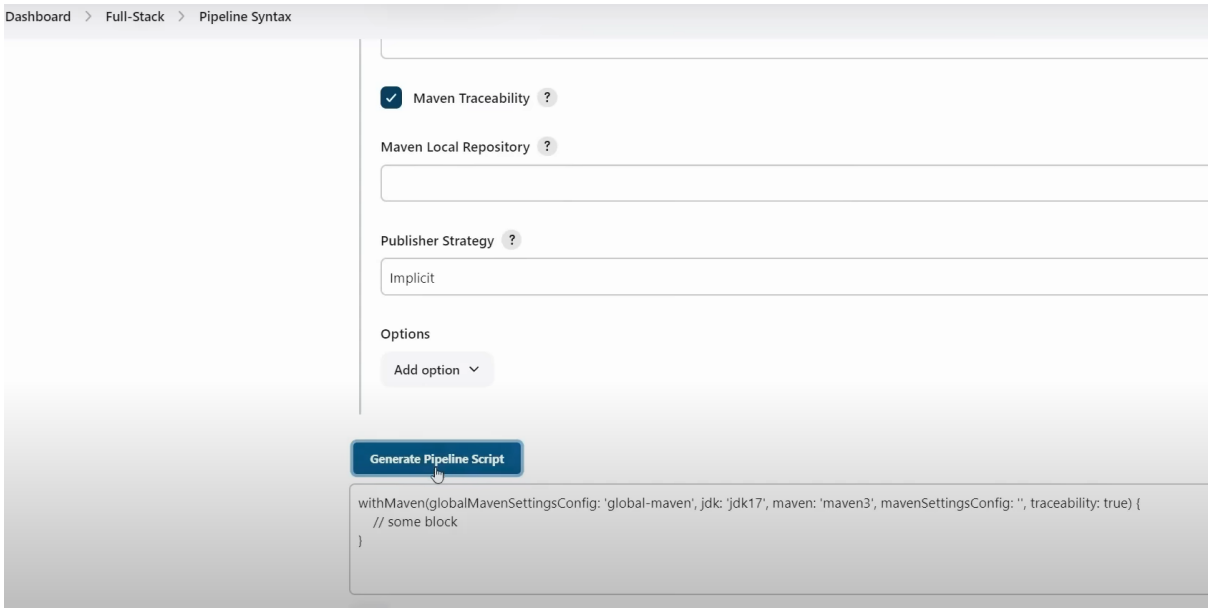

Dashboard
All
Enter an item name
Full-Stack
» Required field
Freestyle project
This is the central feature of Jenkins. Jenkins will build your project, combinin
for something other than software build.
Maven project
Build a maven project. Jenkins takes advantage of your POM files and drastic
Pipeline
Orchestrates long-running activities that can span multiple build agents. Suit
and/or organizing complex activities that do not easily fit in free-style job typ
Multi-configuration project


Dashboard > Full-Stack > Configuration
Configure
General
Advanced Project Options
Pipeline
Pipeline
Definition
Pipeline script
Script ?
pipeline {
agent any
tools {
maven 'maven3'
jdk 'jdk17'
}
stages {
stage('Git Checkout') {
steps {
git branch: 'main', url: 'https://github.com/jaiswaladi246/Ekart.git'
}
}
stage('Compile') {
steps {
sh "mvn compile"
}
}
stage('Hello') {
steps {
echo 'Hello World'


Dashboard > Full-Stack > Configuration
Configure
General
Advanced Project Options
Pipeline
Definition
Pipeline script
Script ?
tools {
maven 'maven3'
jdk 'jdk17'
}
environment {
SCANNER_HOME= tool 'sonar-scanner'
}
stages {
stage('Git Checkout') {
steps {
git branch: 'main', url: 'https://github.com/jaiswaladi246/Ekart.git'
}
}
stage('Compile') {
steps {
sh "mvn compile"
}
}
stage('Unit Tests') {
steps {
sh "mvn test -DskipTests=true"
}
}

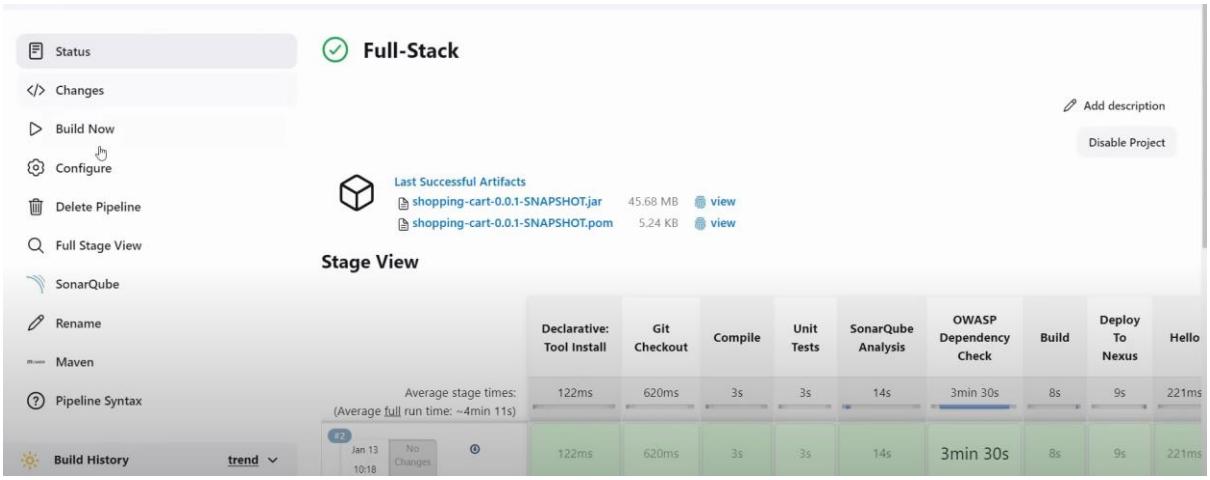
```
        stage('Unit Tests') {
            steps {
                sh "mvn test -DskipTests=true"
            }
        }

        stage('SonarQube Analysis') {
            steps {
               withSonarQubeEnv('sonar') {
                  sh ''' $SCANNER_HOME/bin/sonar-scanner -Dsonar.projectKey=EKART -Dsonar.projectName=EKART \
                  -Dsonar.java.binaries=. '''
               }
            }
        }

        stage('OWASP Dependency Check') {
            steps {
                dependencyCheck additionalArguments: ' --scan ./', odcInstallation: 'DC'
                dependencyCheckPublisher pattern: '**/dependency-check-report.xml'
            }
        }

        stage('Hello') {
            steps {
```

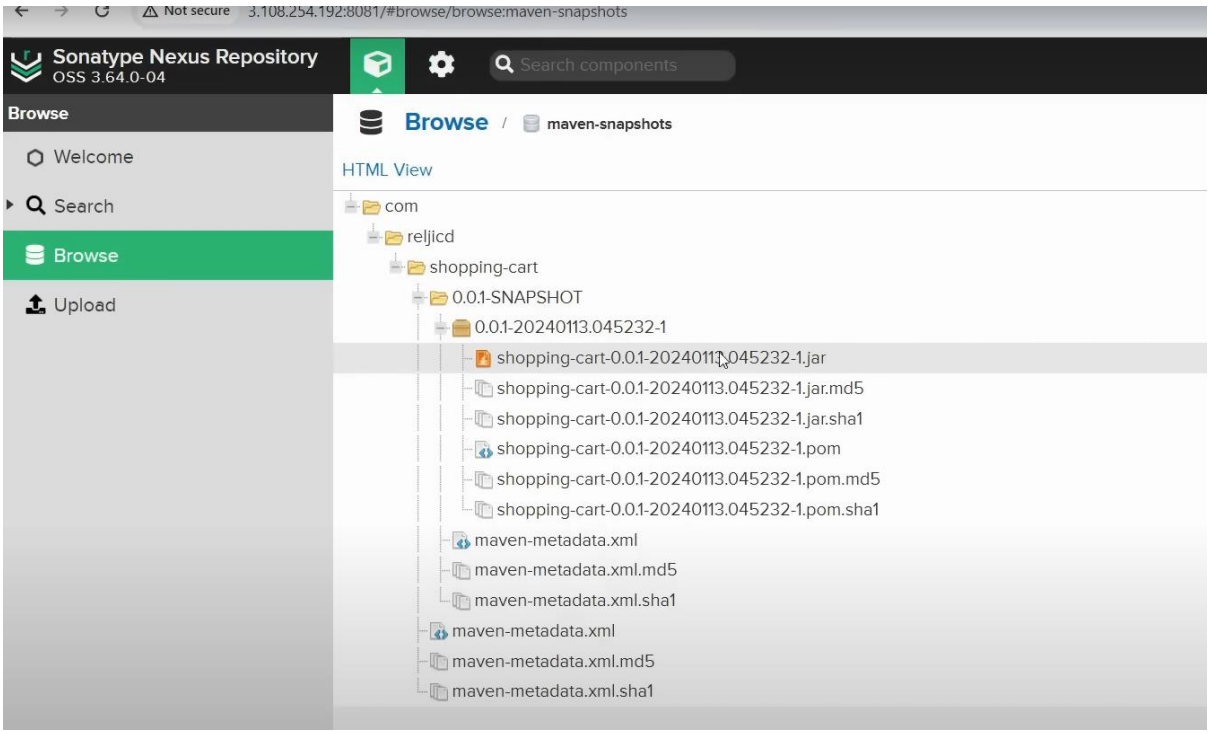

Not secure 3.110.191.210:8080/manage/pluginManager/installed
Dashboard > Manage Jenkins > Plugins
Plugins
Updates
Available plugins
Installed plugins
Advanced settings
Download progress
maven
Name
Config File Provider Plugin 959.vcff671a_4518b_
Ability to provide configuration files (e.g. settings.xml for maven, XML, groovy, custom files,...) load
which will be copied to the job workspace.
Report an issue with this plugin
Maven Integration plugin 3.23
This plugin provides a deep integration between Jenkins and Maven. It adds support for automatic
projects depending on SNAPSHOTs as well as the automated configuration of various Jenkins publ
Report an issue with this plugin
Pipeline Maven Integration Plugin 1368.vfb_8509d7b_869
This plugin provides integration with Pipeline, configures maven environment to use within a pipel
mvn or bat mvn. The selected maven installation will be configured and prepended to the path.
Report an issue with this plugin



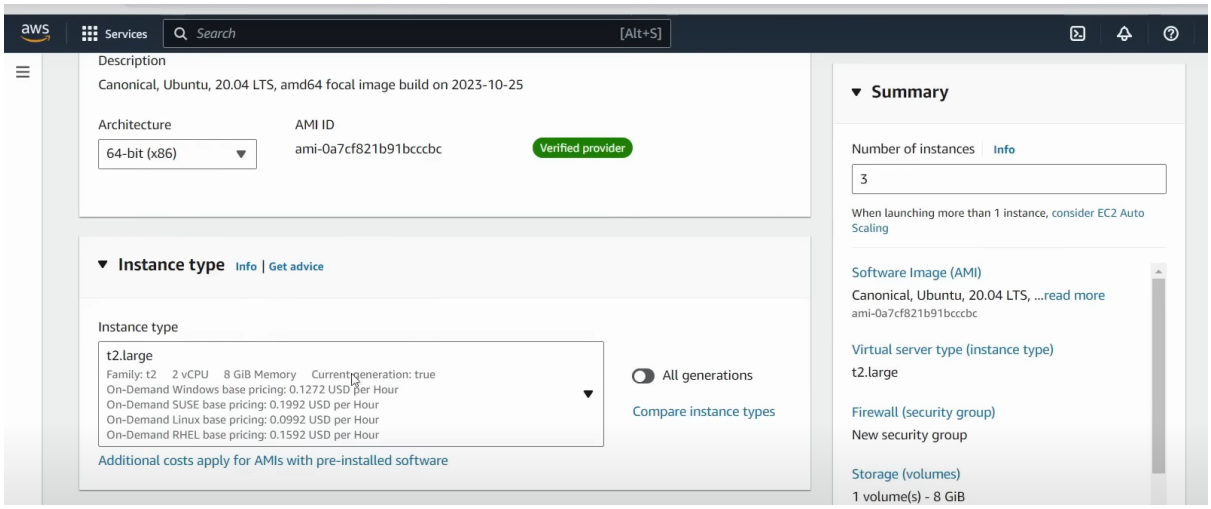
```
47
48      stage('Build') {
49          steps {
50              sh "mvn package -DskipTests=true"
51          }
52      }
53
54      stage('Deploy To Nexus') {
55          steps {
56              withMaven(globalMavenSettingsConfig: 'global-maven', jdk: 'jdk17', maven: 'maven3', mavenSettingsConfig: '',
57                  sh "mvn deploy -DskipTests=true"
58              }
59          }
60      }
61
62      stage('Hello') {
63          steps {
64              echo 'Hello World'
65          }
66      }
67  }
68  }
69
```

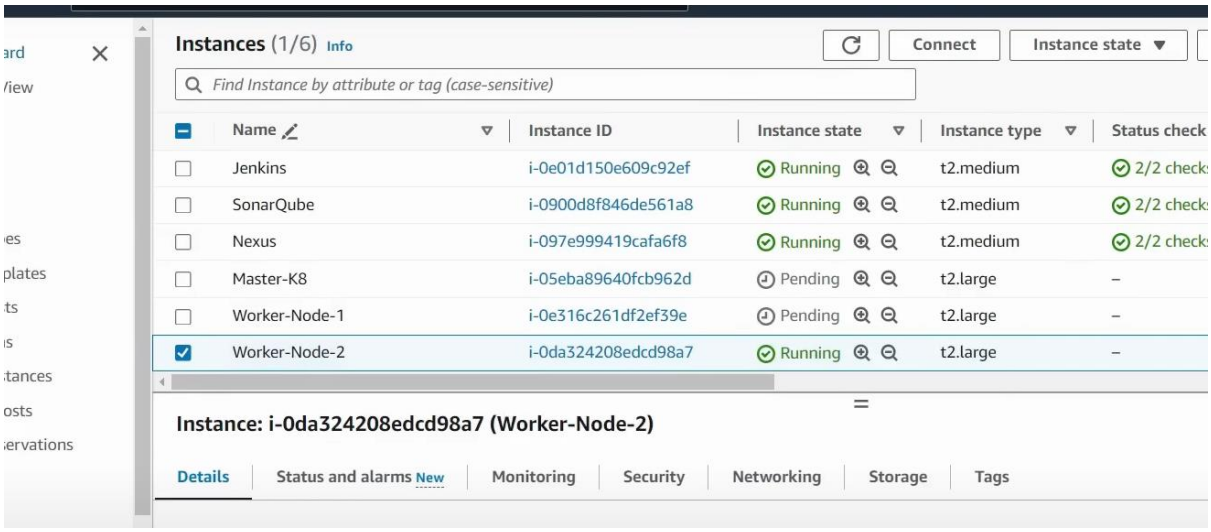
Use Groovy Sandbox ?

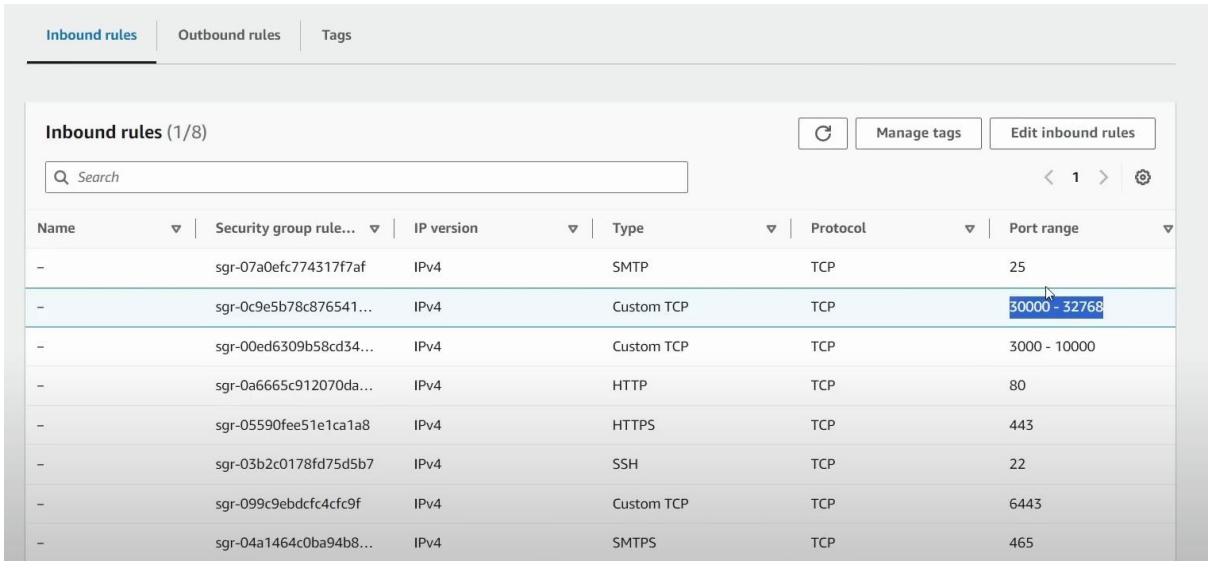


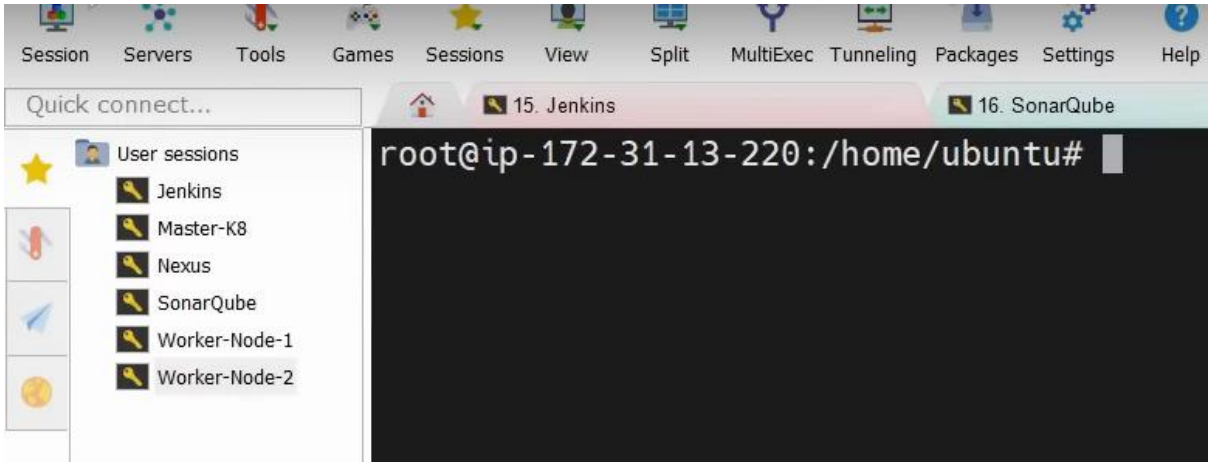


Kubernetes installation









Apply sudo apt update on all server

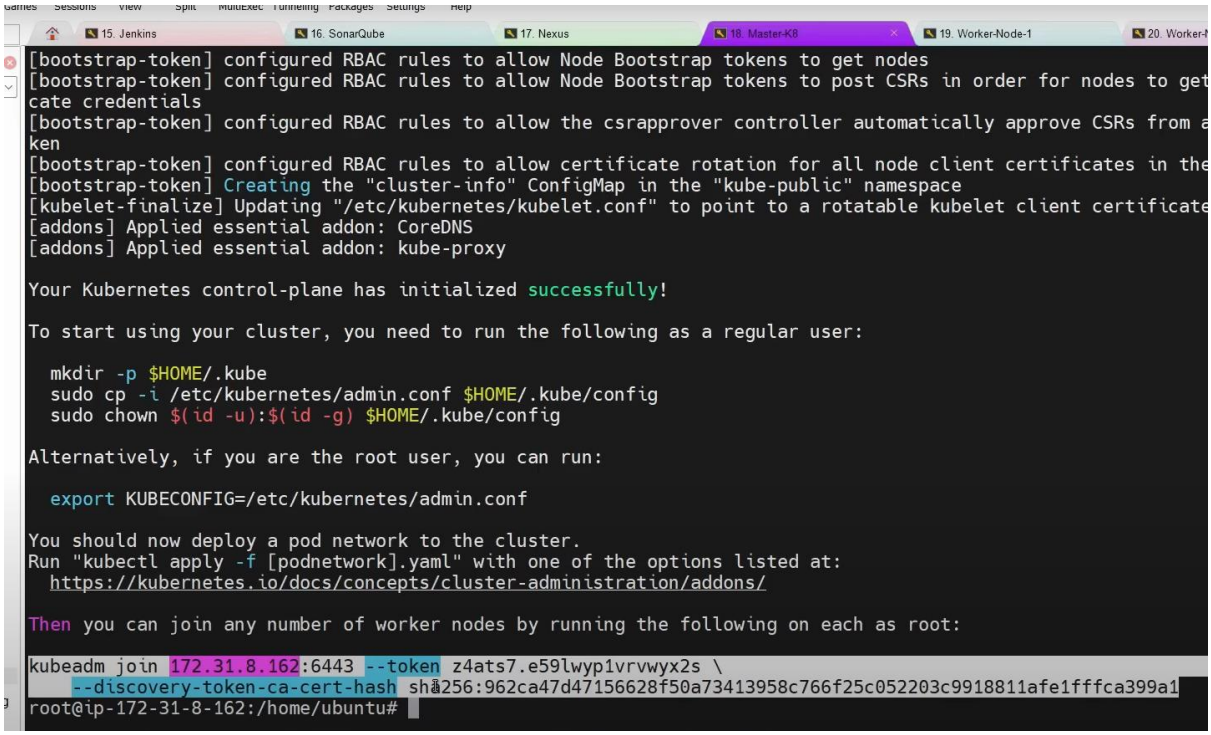
Then sudo su to become root user

Link for K8 installation

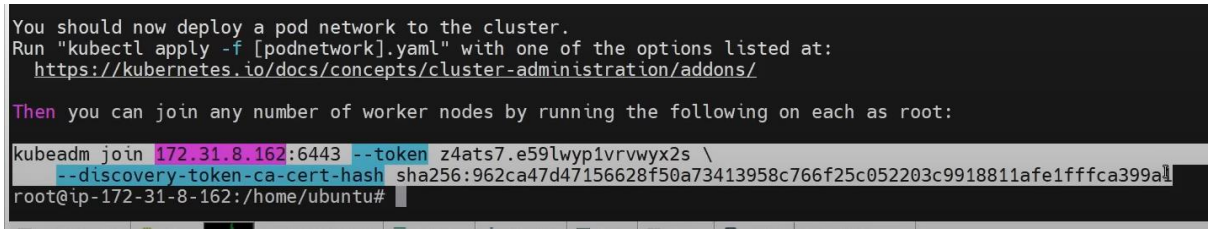
https://github.com/jaiswaladi246/DevOps_Shack_Ultimate_Pipeline_12_march/blob/main/PHASE-1/2.%20K8-Setup.md

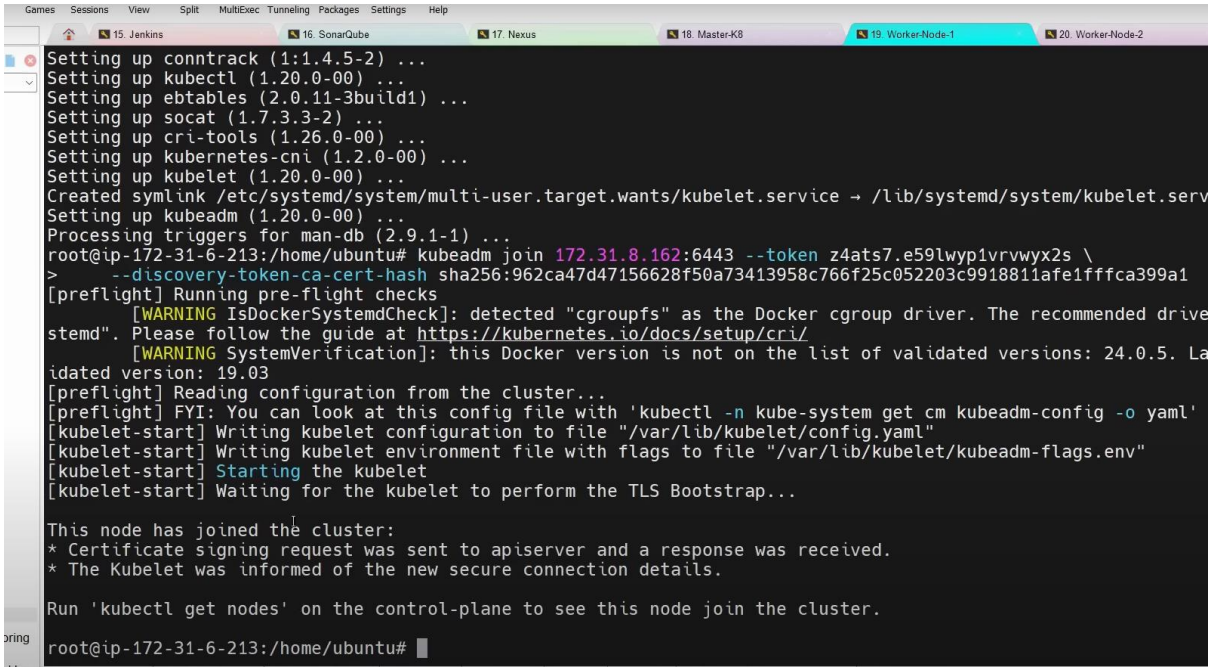
```
# Kubernetes Setup

#On Master and Worker

sudo apt-get update -y
sudo apt-get install docker.io -y
sudo service docker restart
sudo curl -s https://packages.cloud.google.com/apt/doc/apt-key.gpg | apt-key add -
echo "deb http://apt.kubernetes.io/ kubernetes-xenial main" >/etc/apt/sources.list.d/kubernetes.list
sudo apt-get update
sudo apt install kubeadm=1.20.0-00 kubectl=1.20.0-00 kubelet=1.20.0-00 -y

# Step2:

#On Master node:

   kubeadm init --pod-network-cidr=192.168.0.0/16



# Step3:

# On Master node:

mkdir -p $HOME/.kube
sudo cp -i /etc/kubernetes/admin.conf $HOME/.kube/config
sudo chown $(id -u):$(id -g) $HOME/.kube/config
```

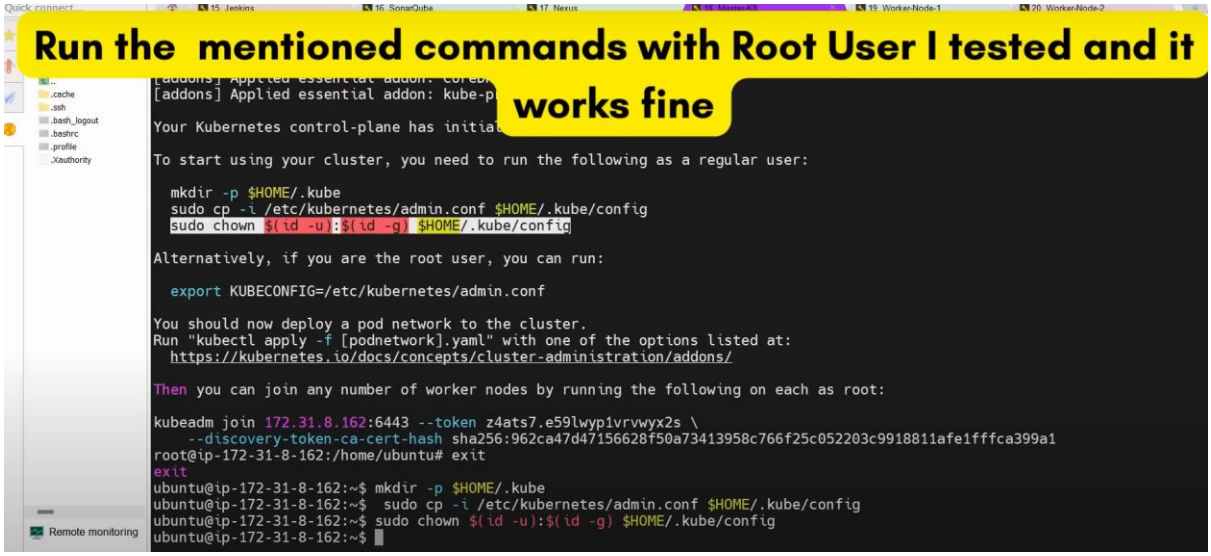
```
# Kubernetes Setup

#On Master and Worker

sudo apt-get update -y
sudo apt-get install docker.io -y
sudo service docker restart
sudo curl -s https://packages.cloud.google.com/apt/doc/apt-key.gpg | apt-key add -
echo "deb http://apt.kubernetes.io/ kubernetes-xenial main" >/etc/apt/sources.list.d/kubernetes.list
sudo apt-get update
sudo apt install kubeadm=1.20.0-00 kubectl=1.20.0-00 kubelet=1.20.0-00 -y

# Step2:

#On Master node:

    kubeadm init --pod-network-cidr=192.168.0.0/16
```


15. Jenkins
16. SonarQube
17. Nexus
18. Master-K8
19. Worker-Node-1
[bootstrap-token] configured RBAC rules to allow Node Bootstrap tokens to get nodes
[bootstrap-token] configured RBAC rules to allow Node Bootstrap tokens to post CSRs in order for nodes to get
cate credentials
[bootstrap-token] configured RBAC rules to allow the csrapprover controller automatically approve CSRs from a
ken
[bootstrap-token] configured RBAC rules to allow certificate rotation for all node client certificates in the
[bootstrap-token] Creating the "cluster-info" ConfigMap in the "kube-public" namespace
[kubelet-finalize] Updating "/etc/kubernetes/kubelet.conf" to point to a rotatable kubelet client certificate
[addons] Applied essential addon: CoreDNS
[addons] Applied essential addon: kube-proxy
Your Kubernetes control-plane has initialized successfully!
To start using your cluster, you need to run the following as a regular user:
mkdir -p $HOME/.kube
sudo cp -i /etc/kubernetes/admin.conf $HOME/.kube/config
sudo chown $(id -u):$(id -g) $HOME/.kube/config
Alternatively, if you are the root user, you can run:
export KUBECONFIG=/etc/kubernetes/admin.conf
You should now deploy a pod network to the cluster.
Run "kubectl apply -f [podnetwork].yaml" with one of the options listed at:
https://kubernetes.io/docs/concepts/cluster-administration/addons/
Then you can join any number of worker nodes by running the following on each as root:
kubeadm join 172.31.8.162:6443 --token z4ats7.e59lwyp1vrvwyx2s \
--discovery-token-ca-cert-hash sha256:962ca47d47156628f50a73413958c766f25c052203c9918811afe1fffca399a1
root@ip-172-31-8-162:/home/ubuntu#

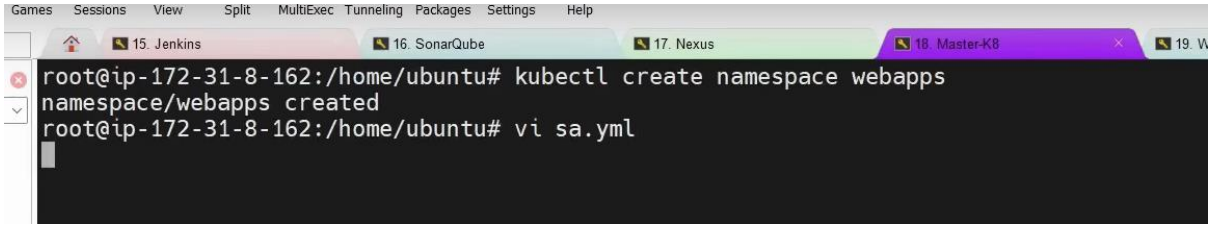
Run this command on both worker node

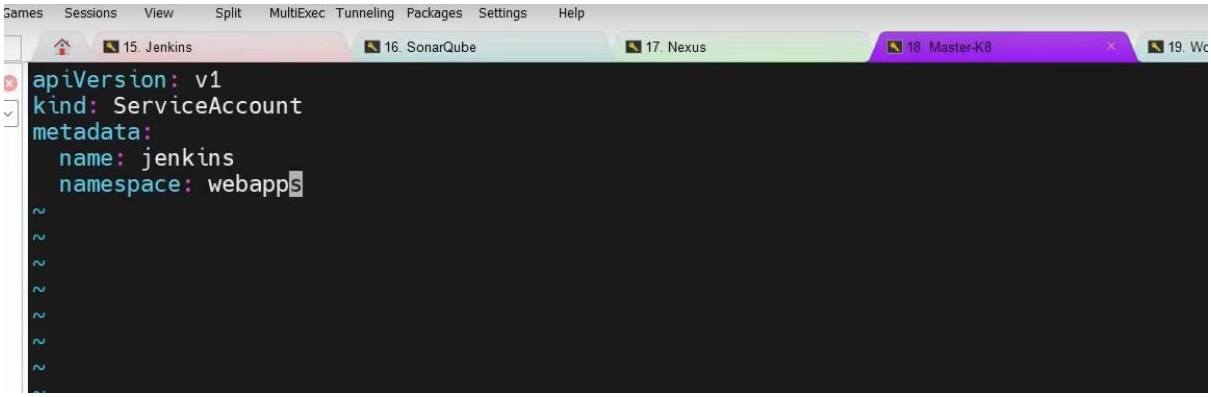

You should now deploy a pod network to the cluster.
Run "kubectl apply -f [podnetwork].yaml" with one of the options listed at:
https://kubernetes.io/docs/concepts/cluster-administration/addons/
Then you can join any number of worker nodes by running the following on each as root:
kubeadm join 172.31.8.162:6443 --token z4ats7.e59lwyp1vrvwyx2s \
--discovery-token-ca-cert-hash sha256:962ca47d47156628f50a73413958c766f25c052203c9918811afe1fffca399a1
root@ip-172-31-8-162:/home/ubuntu#

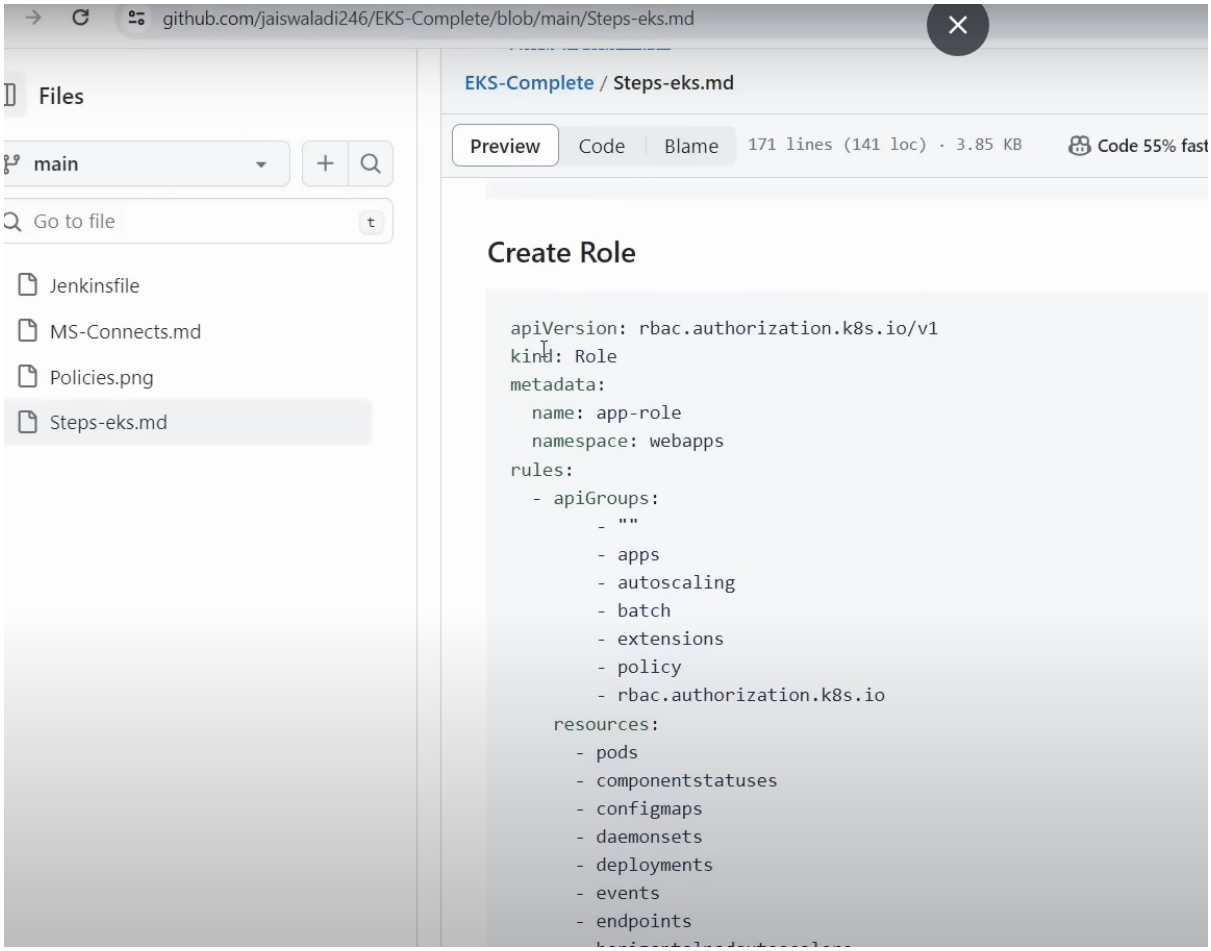

Games Sessions View Split MultiExec Tunneling Packages Settings Help
15. Jenkins
16. SonarQube
17. Nexus
18. Master-K8
19. Worker-Node-1
20. Worker-Node-2
Setting up conntrack (1:1.4.5-2) ...
Setting up kubectl (1.20.0-00) ...
Setting up ebtables (2.0.11-3build1) ...
Setting up socat (1.7.3.3-2) ...
Setting up cri-tools (1.26.0-00) ...
Setting up kubernetes-cni (1.2.0-00) ...
Setting up kubelet (1.20.0-00) ...
Created symlink /etc/systemd/system/multi-user.target.wants/kubelet.service → /lib/systemd/system/kubelet.serv
Setting up kubeadm (1.20.0-00) ...
Processing triggers for man-db (2.9.1-1) ...
root@ip-172-31-6-213:/home/ubuntu# kubeadm join 172.31.8.162:6443 --token z4ats7.e59lwyp1vrvwyx2s \
> --discovery-token-ca-cert-hash sha256:962ca47d47156628f50a73413958c766f25c052203c9918811afe1fffca399a1
[preflight] Running pre-flight checks
[WARNING IsDockerSystemdCheck]: detected "cgroupfs" as the Docker cgroup driver. The recommended drive
stemd". Please follow the guide at https://kubernetes.io/docs/setup/cri/
[WARNING SystemVerification]: this Docker version is not on the list of validated versions: 24.0.5. La
idated version: 19.03
[preflight] Reading configuration from the cluster...
[preflight] FYI: You can look at this config file with 'kubectl -n kube-system get cm kubeadm-config -o yaml'
[kubelet-start] Writing kubelet configuration to file "/var/lib/kubelet/config.yaml"
[kubelet-start] Writing kubelet environment file with flags to file "/var/lib/kubelet/kubeadm-flags.env"
[kubelet-start] Starting the kubelet
[kubelet-start] Waiting for the kubelet to perform the TLS Bootstrap...
This node has joined the cluster:
* Certificate signing request was sent to apiserver and a response was received.
* The Kubelet was informed of the new secure connection details.
Run 'kubectl get nodes' on the control-plane to see this node join the cluster.
root@ip-172-31-6-213:/home/ubuntu#

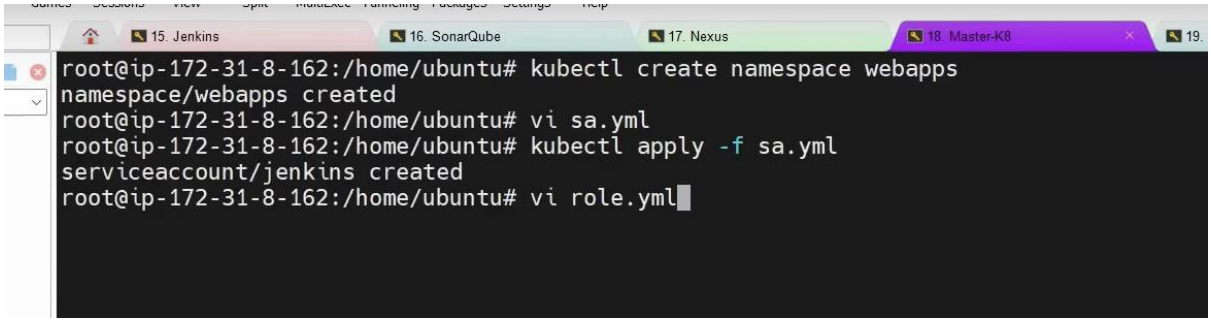

Run the mentioned commands with Root User I tested and it works fine
[addons] Applied essential addon: kube-p
Your Kubernetes control-plane has initia
To start using your cluster, you need to run the following as a regular user:
mkdir -p $HOME/.kube
sudo cp -i /etc/kubernetes/admin.conf $HOME/.kube/config
sudo chown $(id -u):$(id -g) $HOME/.kube/config
Alternatively, if you are the root user, you can run:
export KUBECONFIG=/etc/kubernetes/admin.conf
You should now deploy a pod network to the cluster.
Run "kubectl apply -f [podnetwork].yaml" with one of the options listed at:
https://kubernetes.io/docs/concepts/cluster-administration/addons/
Then you can join any number of worker nodes by running the following on each as root:
kubeadm join 172.31.8.162:6443 --token z4ats7.e59lwyp1vrvwyx2s \
--discovery-token-ca-cert-hash sha256:962ca47d47156628f50a73413958c766f25c052203c9918811afe1fffca399a1
root@ip-172-31-8-162:/home/ubuntu# exit
exit
ubuntu@ip-172-31-8-162:~$ mkdir -p $HOME/.kube
ubuntu@ip-172-31-8-162:~$ sudo cp -i /etc/kubernetes/admin.conf $HOME/.kube/config
ubuntu@ip-172-31-8-162:~$ sudo chown $(id -u):$(id -g) $HOME/.kube/config
ubuntu@ip-172-31-8-162:~$
Remote monitoring

```
# Step3:

# On Master node:

mkdir -p $HOME/.kube
sudo cp -i /etc/kubernetes/admin.conf $HOME/.kube/config
sudo chown $(id -u):$(id -g) $HOME/.kube/config



# step4:

#On Master node:

kubectl apply -f https://docs.projectcalico.org/v3.20/manifests/calico.yaml
kubectl apply -f https://raw.githubusercontent.com/kubernetes/ingress-nginx/controller-v0.49.0/deploy/static/provider/baremetal/deploy.yaml
```


Games Sessions View Split MultiExec Tunneling Packages Settings Help
15. Jenkins
16. SonarQube
17. Nexus
18. Master-K8
19. W
root@ip-172-31-8-162:/home/ubuntu# kubectl create namespace webapps
namespace/webapps created
root@ip-172-31-8-162:/home/ubuntu# vi sa.yml


Games Sessions View Split MultiExec Tunneling Packages Settings Help
15. Jenkins
16. SonarQube
17. Nexus
18. Master-K8
19. Wo
apiVersion: v1
kind: ServiceAccount
metadata:
name: jenkins
namespace: webapps


github.com/jaiswaladi246/EKS-Complete/blob/main/Steps-eks.md
Files
main
Go to file
t
Jenkinsfile
MS-Connects.md
Policies.png
Steps-eks.md
EKS-Complete / Steps-eks.md
Preview
Code
Blame
171 lines (141 loc) · 3.85 KB
Code 55% fast
Create Role
apiVersion: rbac.authorization.k8s.io/v1
kind: Role
metadata:
name: app-role
namespace: webapps
rules:
- apiGroups:
- ""
- apps
- autoscaling
- batch
- extensions
- policy
- rbac.authorization.k8s.io
resources:
- pods
- componentstatuses
- configmaps
- daemonsets
- deployments
- events
- endpoints



Link to role document: https://github.com/jaiswaladi246/EKS-Complete/blob/main/Steps-eks.md

Paste this code in role.yml

```
apiVersion: rbac.authorization.k8s.io/v1
kind: Role
metadata:
  name: app-role
  namespace: webapps
rules:
  - apiGroups:
      - ""
      - apps
      - autoscaling
      - batch
      - extensions
      - policy
      - rbac.authorization.k8s.io
    resources:
      - pods
      - secrets
      - componentstatuses
      - configmaps
```

- daemonsets

- deployments

- events

- endpoints

- horizontalpodautoscalers

- ingress

- jobs

- limitranges

- namespaces

- nodes

- pods

- persistentvolumes

- persistentvolumeclaims

- resourcequotas

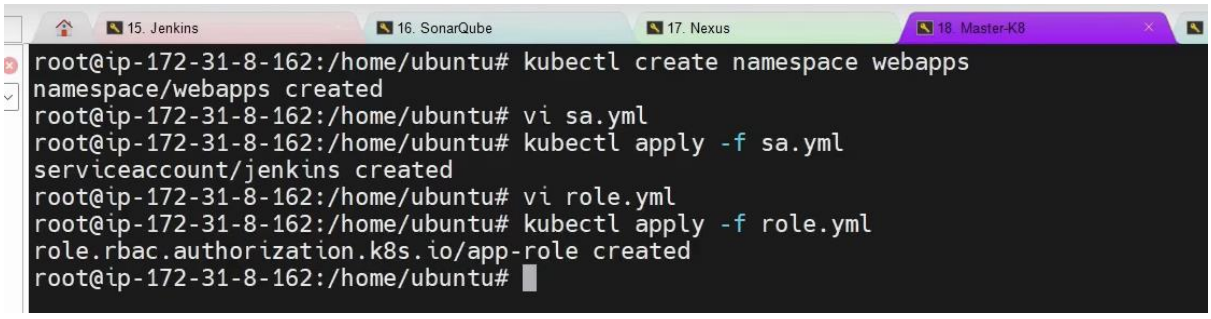
- replicasets

- replicationcontrollers

- serviceaccounts

- services

verbs: ["get", "list", "watch", "create", "update", "patch", "delete"]



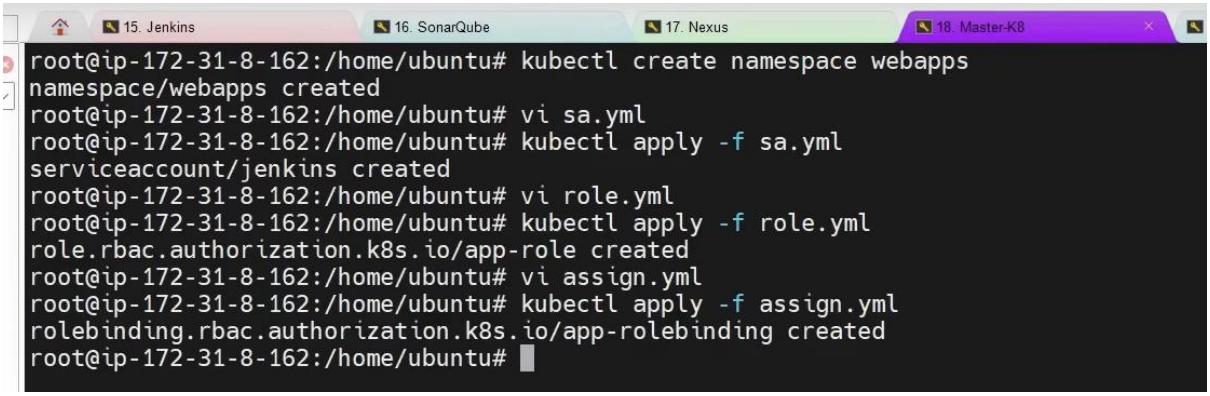
Bind the role to service account

apiVersion: rbac.authorization.k8s.io/v1

kind: RoleBinding

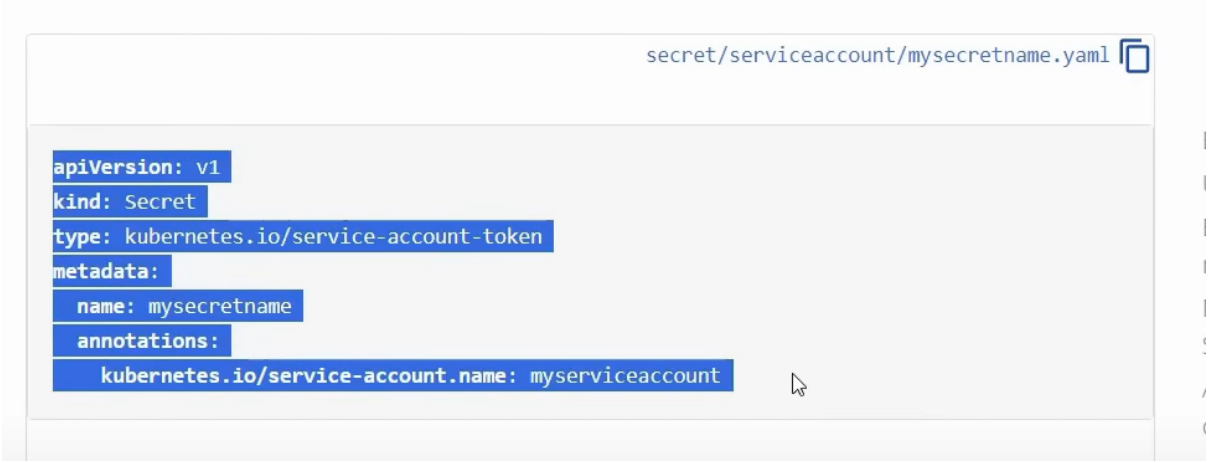
metadata:

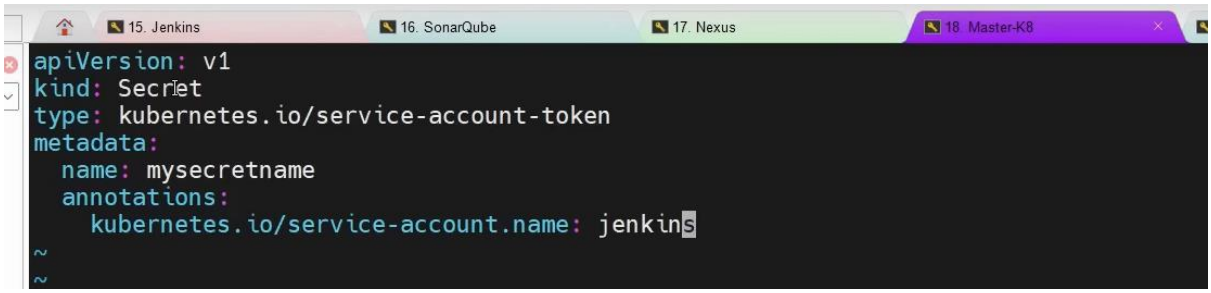
```
  name: app-rolebinding
  namespace: webapps
roleRef:
  apiGroup: rbac.authorization.k8s.io
  kind: Role
  name: app-role
subjects:
- namespace: webapps
  kind: ServiceAccount
  name: Jenkins
```

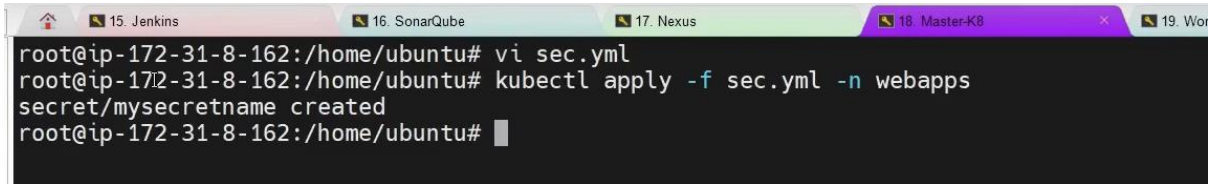


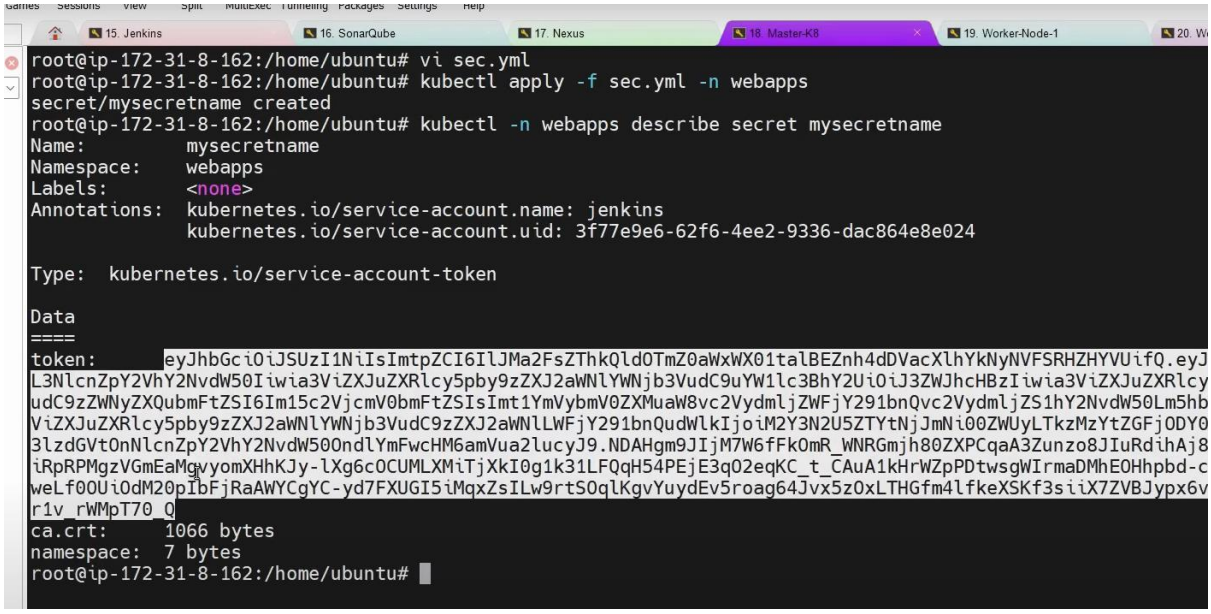
Generate token using service account in the namespace

https://kubernetes.io/docs/reference/access-authn-authz/service-accounts-admin/#:~:text=To%20create%20a%20non%2Dexpiring,with%20that%20generated%20token%20data.

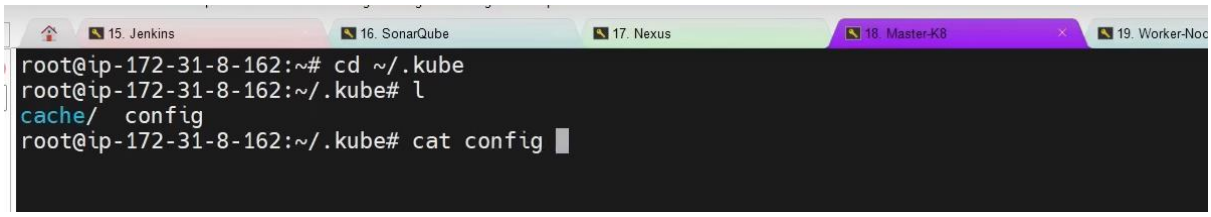








Copy this token on notepad for future reference



Trivy installation

---INSTALLATION STEPS---

sudo apt-get install wget apt-transport-https gnupg lsb-release

wget -qO - https://aquasecurity.github.io/trivy-repo/deb/public.key | gpg --dearmor | sudo tee /usr/share/keyrings/trivy.gpg > /dev/null

echo "deb [signed-by=/usr/share/keyrings/trivy.gpg] https://aquasecurity.github.io/trivy-repo/deb $(lsb_release -sc) main" | sudo tee -a /etc/apt/sources.list.d/trivy.list

sudo apt-get update

sudo apt-get install trivy

---COMMANDS---

trivy image imagename

trivy fs --security-checks vuln,config Folder_name_OR_Path

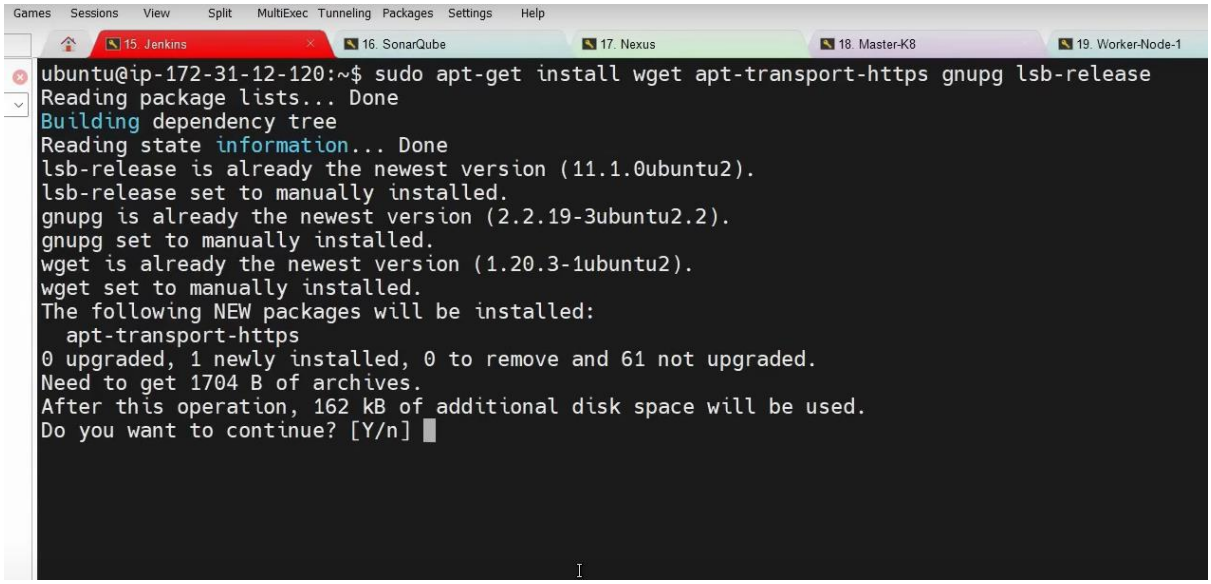
trivy image --severity HIGH,CRITICAL image_name

trivy image -f json -o results.json image_name

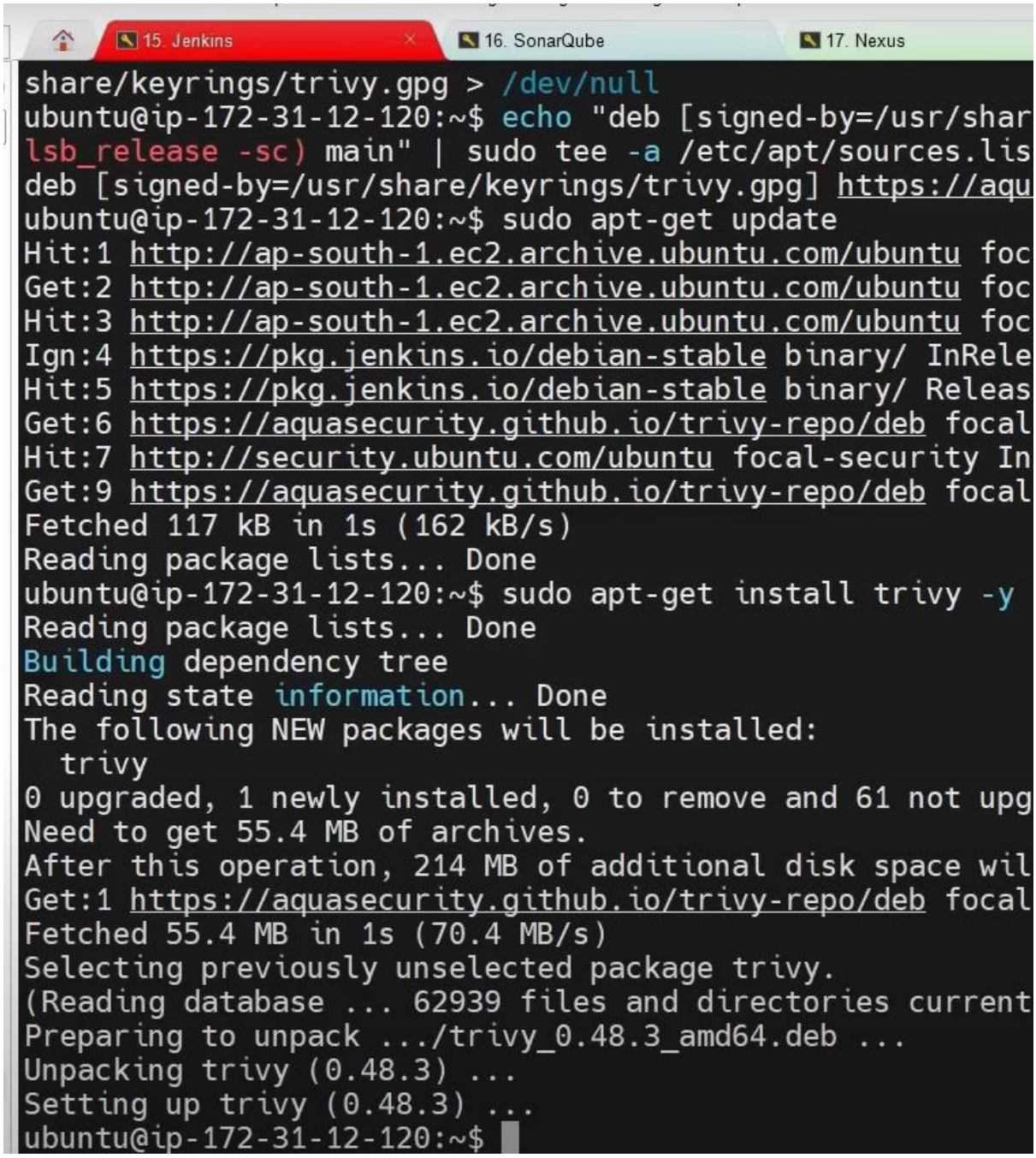
trivy repo repo-url

trivy k8s --report summary cluster

```
sudo chmod 666 /var/run/docker.sock
'**/dependency-check-report.xml'

---TRIVY INSTALLATION STEPS---

sudo apt-get install wget apt-transport-https gnupg lsb-release

wget -qO - https://aquasecurity.github.io/trivy-repo/deb/public.key | gpg --dearmor | sudo tee /usr/share/keyrings/trivy.gpg >
/dev/null

echo "deb [signed-by=/usr/share/keyrings/trivy.gpg] https://aquasecurity.github.io/trivy-repo/deb $(lsb_release -sc) main" | sudo
tee -a /etc/apt/sources.list.d/trivy.list

sudo apt-get update

sudo apt-get install trivy -y

# Kubernetes Setup

#On Master and Worker

sudo apt-get update -y
sudo apt-get install docker.io -y
sudo service docker restart
sudo curl -s https://packages.cloud.google.com/apt/doc/apt-key.gpg | apt-key add -
echo "deb http://apt.kubernetes.io/ kubernetes-xenial main" >/etc/apt/sources.list.d/kubernetes.list
sudo apt-get update
sudo apt install kubeadm=1.20.0-00 kubectl=1.20.0-00 kubelet=1.20.0-00 -y
```


Games Sessions View Split MultiExec Tunneling Packages Settings Help
15. Jenkins
16. SonarQube
17. Nexus
18. Master-K8
19. Worker-Node-1
ubuntu@ip-172-31-12-120:~$ sudo apt-get install wget apt-transport-https gnupg lsb-release
Reading package lists... Done
Building dependency tree
Reading state information... Done
lsb-release is already the newest version (11.1.0ubuntu2).
lsb-release set to manually installed.
gnupg is already the newest version (2.2.19-3ubuntu2.2).
gnupg set to manually installed.
wget is already the newest version (1.20.3-1ubuntu2).
wget set to manually installed.
The following NEW packages will be installed:
apt-transport-https
0 upgraded, 1 newly installed, 0 to remove and 61 not upgraded.
Need to get 1704 B of archives.
After this operation, 162 kB of additional disk space will be used.
Do you want to continue? [Y/n]

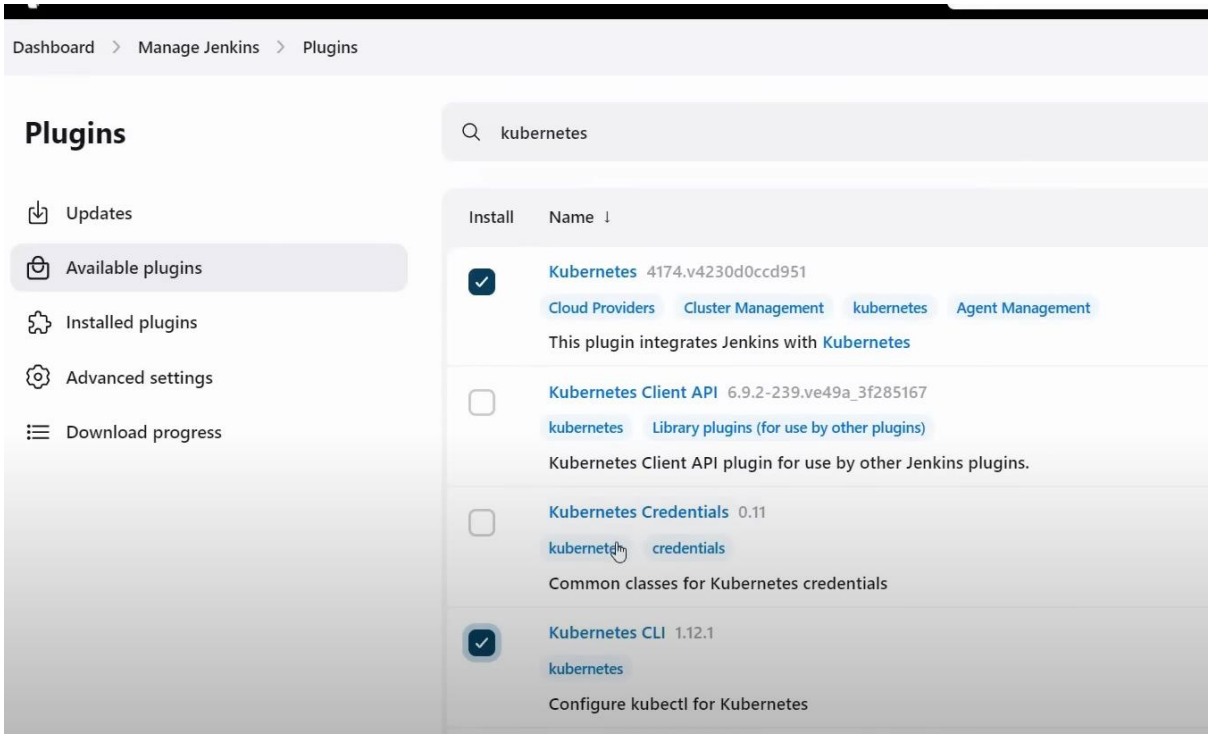
```
---TRIVY INSTALLATION STEPS---

sudo apt-get install wget apt-transport-https gnupg lsb-

wget -qO - https://aquasecurity.github.io/trivy-repo/deb
/dev/null

echo "deb [signed-by=/usr/share/keyrings/trivy.gpg] http
tee -a /etc/apt/sources.list.d/trivy.list

sudo apt-get update

sudo apt-get install trivy -y
```


15. Jenkins
16. SonarQube
17. Nexus
share/keyrings/trivy.gpg > /dev/null
ubuntu@ip-172-31-12-120:~$ echo "deb [signed-by=/usr/shar
lsb_release -sc) main" | sudo tee -a /etc/apt/sources.lis
deb [signed-by=/usr/share/keyrings/trivy.gpg] https://aqu
ubuntu@ip-172-31-12-120:~$ sudo apt-get update
Hit:1 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu foc
Get:2 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu foc
Hit:3 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu foc
Ign:4 https://pkg.jenkins.io/debian-stable binary/ InRele
Hit:5 https://pkg.jenkins.io/debian-stable binary/ Releas
Get:6 https://aquasecurity.github.io/trivy-repo/deb focal
Hit:7 http://security.ubuntu.com/ubuntu focal-security In
Get:9 https://aquasecurity.github.io/trivy-repo/deb focal
Fetched 117 kB in 1s (162 kB/s)
Reading package lists... Done
ubuntu@ip-172-31-12-120:~$ sudo apt-get install trivy -y
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
  trivy
0 upgraded, 1 newly installed, 0 to remove and 61 not upg
Need to get 55.4 MB of archives.
After this operation, 214 MB of additional disk space wil
Get:1 https://aquasecurity.github.io/trivy-repo/deb focal
Fetched 55.4 MB in 1s (70.4 MB/s)
Selecting previously unselected package trivy.
(Reading database ... 62939 files and directories current
Preparing to unpack .../trivy_0.48.3_amd64.deb ...
Unpacking trivy (0.48.3) ...
Setting up trivy (0.48.3) ...
ubuntu@ip-172-31-12-120:~$

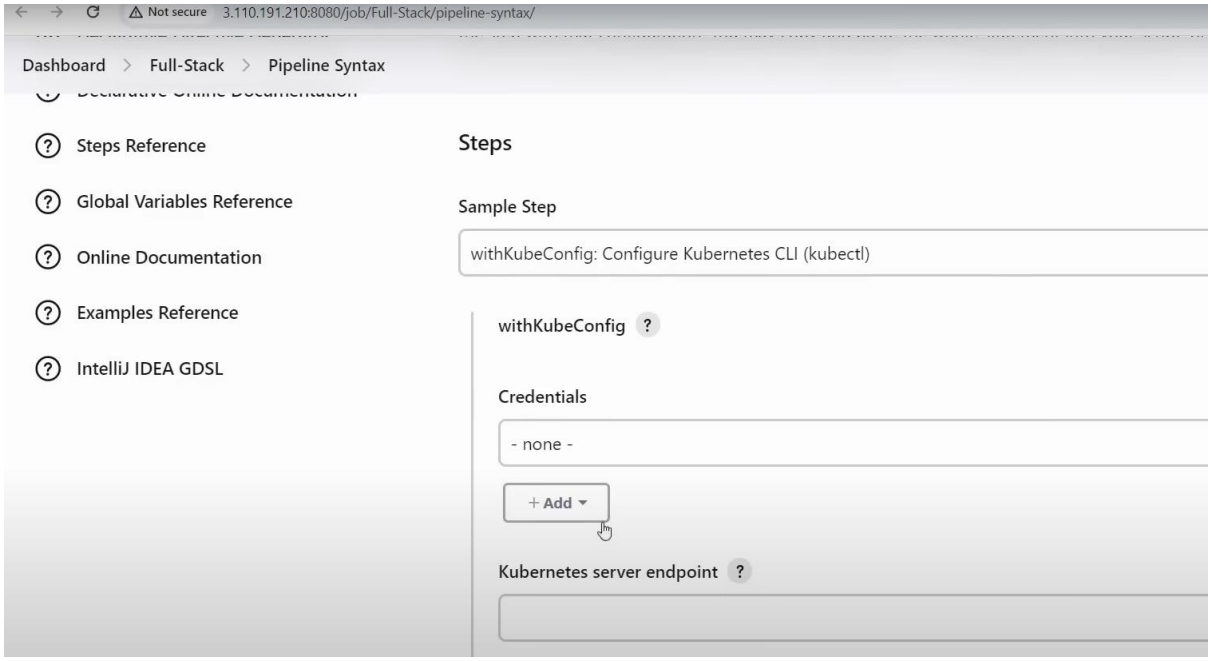
```
        }
    }

    stage('Deploy To Nexus') {
        steps {
            withMaven(globalMavenSettingsConfig: 'global-maven', jdk: 'jdk17', maven: 'maven3', mavenSettings
                sh "mvn deploy -DskipTests=true"
            }
        }
    }

    stage('Docker Build & tag Image') {
        steps {
            script {
                withDockerRegistry(credentialsId: 'docker-cred', toolName: 'docker') {
                    sh "docker build -t adijaiswal/ekart:latest -f docker/Dockerfile ."
                }
            }
        }
    }
}
}
```

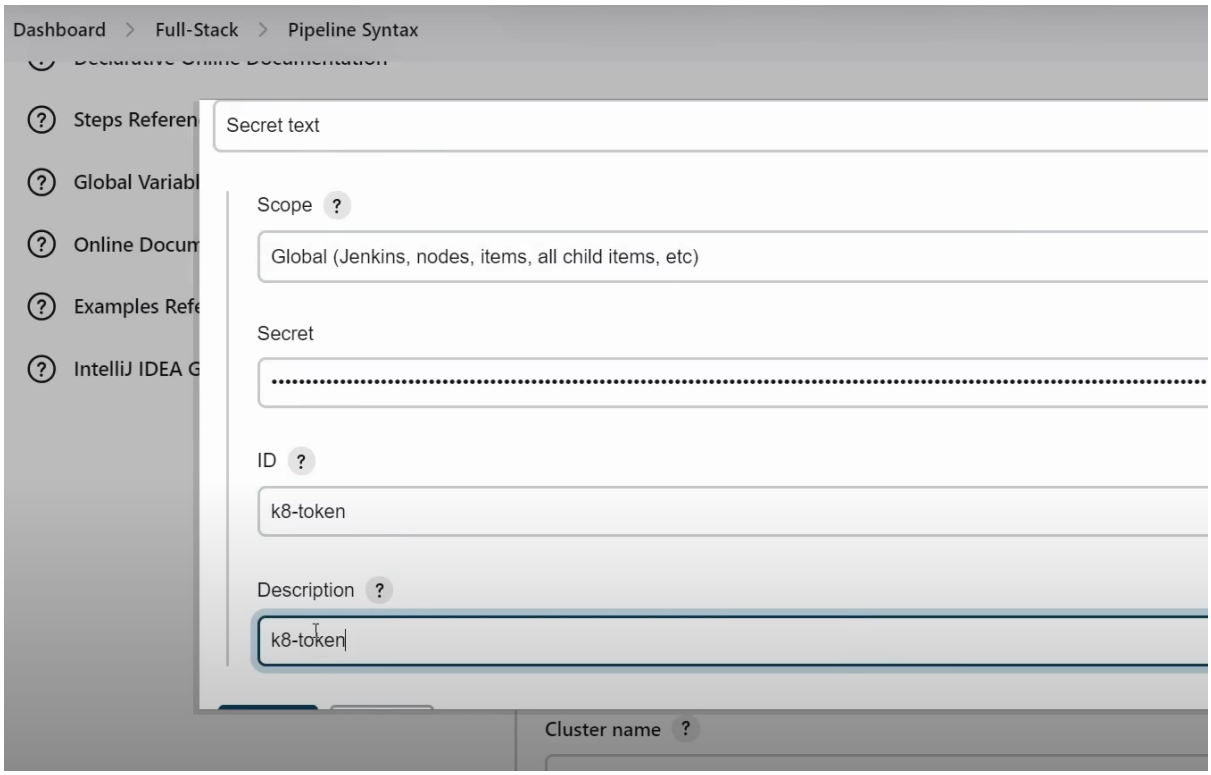
```
61
62      stage('Docker Build & tag Image') {
63          steps {
64              script {
65                  withDockerRegistry(credentialsId: 'docker-cred', toolName: 'docker') {
66                      sh "docker build -t adijaiswal/ekart:latest -f docker/Dockerfile ."
67                  }
68              }
69          }
70      }
71
72       stage('Trivy Scan') {
73          steps {
74              sh "trivy image adijaiswal/ekart:latest > trivy-report.txt "
75          }
76      }
77
78      stage('Docker Build & tag Image') {
79          steps {
80              script {
81                  withDockerRegistry(credentialsId: 'docker-cred', toolName: 'docker') {
82                      sh "docker push adijaiswal/ekart:latest"
83                  }
84              }
85          }
86      }
87
88
89  }
90
```

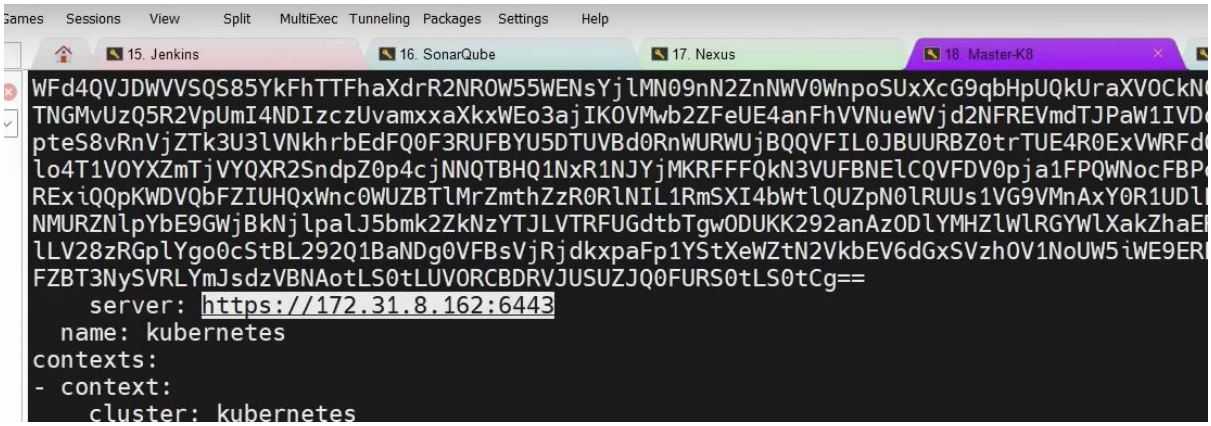
Use Groovy Sandbox ?

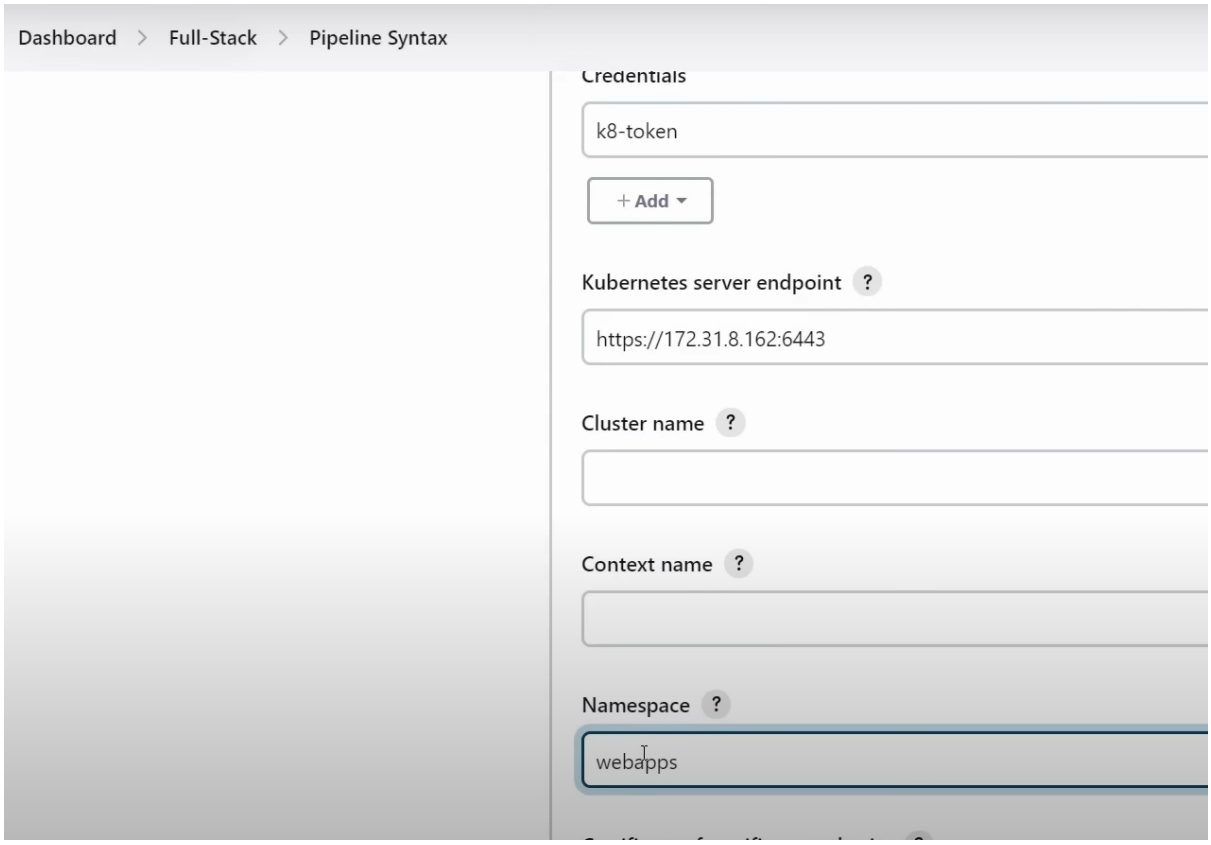


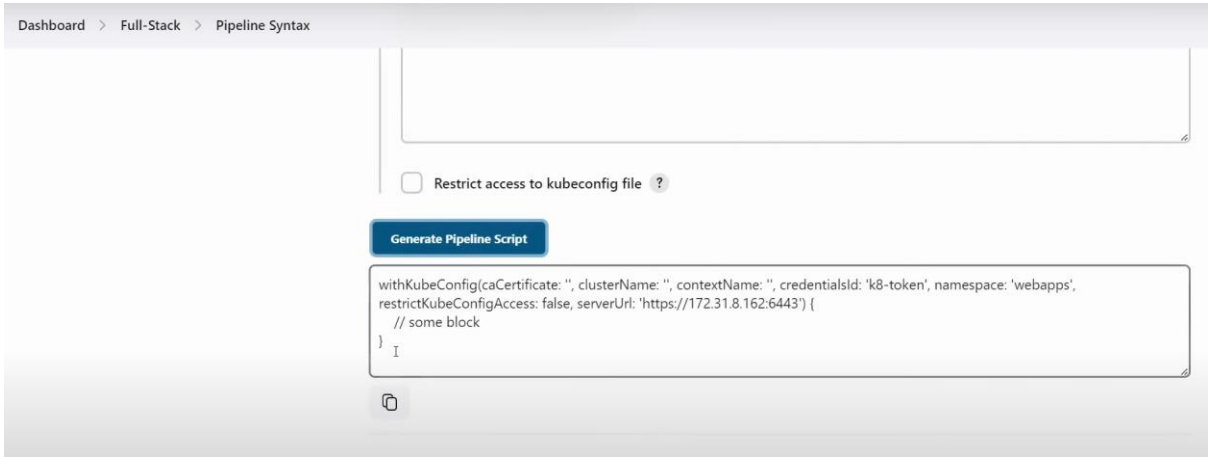
Token from master node


Not secure 3.110.191.210:8080/job/Full-Stack/pipeline-syntax/
Dashboard > Full-Stack > Pipeline Syntax
Steps Reference
Global Variables Reference
Online Documentation
Examples Reference
IntelliJ IDEA GDSL
Steps
Sample Step
withKubeConfig: Configure Kubernetes CLI (kubectl)
withKubeConfig
Credentials
- none -
+ Add
Kubernetes server endpoint


Dashboard > Full-Stack > Pipeline Syntax
Secret text
Scope
Global (Jenkins, nodes, items, all child items, etc)
Secret
ID
k8-token
Description
k8-token
Cluster name


Games Sessions View Split MultiExec Tunneling Packages Settings Help
15. Jenkins
16. SonarQube
17. Nexus
18. Master-K8
server: https://172.31.8.162:6443
name: kubernetes
contexts:
- context:
cluster: kubernetes


Dashboard > Full-Stack > Pipeline Syntax
Credentials
k8-token
+ Add
Kubernetes server endpoint
https://172.31.8.162:6443
Cluster name
Context name
Namespace
webapps


Dashboard > Full-Stack > Pipeline Syntax
Restrict access to kubeconfig file
Generate Pipeline Script
withKubeConfig(caCertificate: '', clusterName: '', contextName: '', credentialsId: 'k8-token', namespace: 'webapps',
restrictKubeConfigAccess: false, serverUrl: 'https://172.31.8.162:6443') {
// some block
}

```
        }

        stage('Docker Build & tag Image') {
            steps {
                script {
                    withDockerRegistry(credentialsId: 'docker-cred', toolName: 'docker') {
                        sh "docker push adijaiswal/ekart:latest"
                    }
                }
            }
        }
        stage('Kubernetes Deploy') {
            steps {
                withKubeConfig(caCertificate: '', clusterName: '', contextName: '', credentialsId: 'k8-tok
                }
            }
        }

    }
```

github.com/jaiswaladi246/Ekart/blob/main/deploymentservice.yml

jaiswaladi246 Update deploymentservice.yml

Code | Blame | 36 lines (33 loc) · 1014 Bytes

```yaml
apiVersion: apps/v1
kind: Deployment # Kubernetes resource kind we are creating
metadata:
  name: ekart-deployment
spec:
  selector:
    matchLabels:
      app: ekart
  replicas: 2 # Number of replicas that will be created for this deployment
  template:
    metadata:
      labels:
        app: ekart
    spec:
      containers:
        - name: ekart
          image: adijaiswal/cicddevops:6 # Image that will be used to containers in the cluster
          imagePullPolicy: IfNotPresent
          ports:
            - containerPort: 8080 # The port that the container is running on in the cluster

```

Check dockerfilefor port 8070 container running

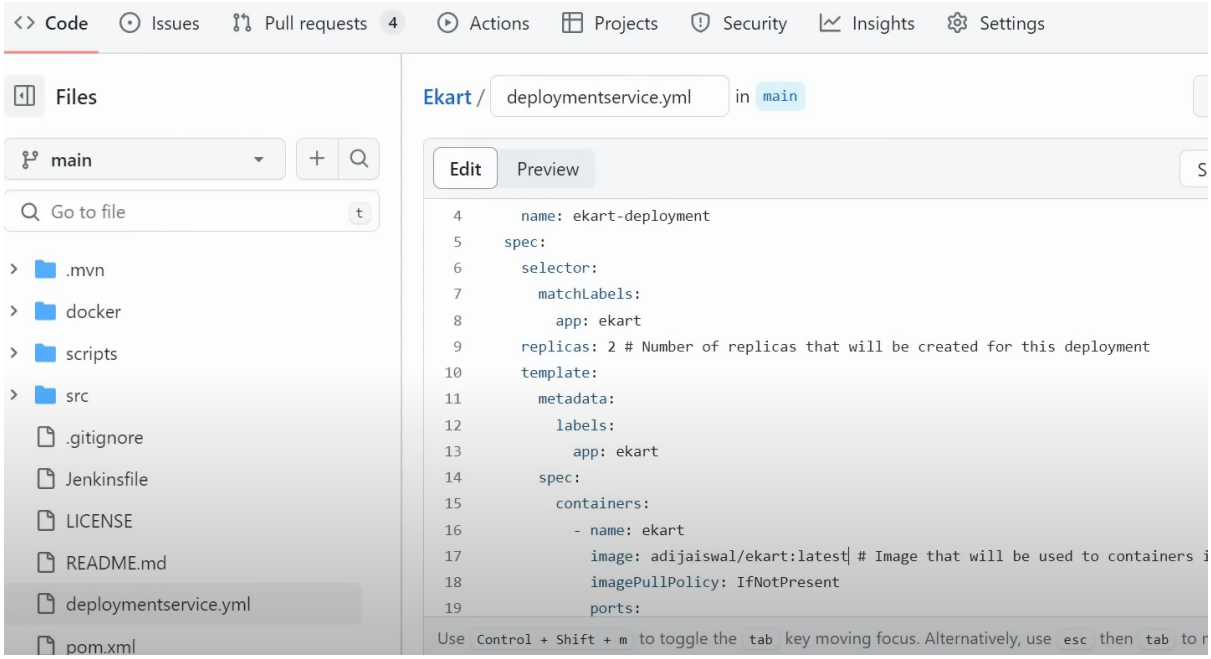
Edit Preview

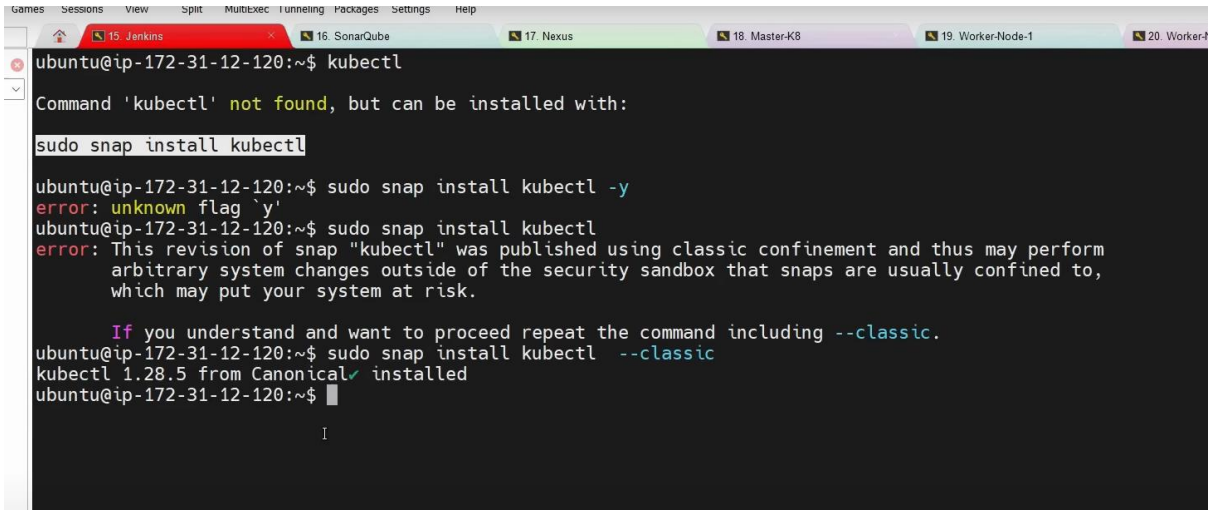
```
            - name: ekart
              image: adijaiswal/cicddevops:6 # Image that will be used to containers ir
              imagePullPolicy: IfNotPresent
              ports:
                - containerPort: 8070 # The port that the container is running on in th


---

apiVersion: v1 # Kubernetes API version
kind: Service # Kubernetes resource kind we are creating
metadata: # Metadata of the resource kind we are creating
  name: ekart-ssvc
spec:
  selector:
    app: ekart
  ports:
    - protocol: "TCP"
      port: 8080 # The port that the service is running on in the cluster
      targetPort: 8080 # The port exposed by the service
```

```
    }

    stage('Trivy Scan') {
        steps {
            sh "trivy image adijaiswal/ekart:latest > trivy-report.txt "
        }
    }

    stage('Docker Build & tag Image') {
        steps {
            script {
                withDockerRegistry(credentialsId: 'docker-cred', toolName: 'docker') {
                    sh "docker push adijaiswal/ekart:latest"
                }
            }
        }
    }
    stage('Kubernetes Deploy') {
        steps {
            withKubeConfig(caCertificate: '', clusterName: '', contextName: '', credentialsId: 'k8-tok
              sh "kubectl apply -f deploymentservice.yml -n webapps"
              sh "kubectl get svc -n webapps"
          }
        }
    }

}
}
```

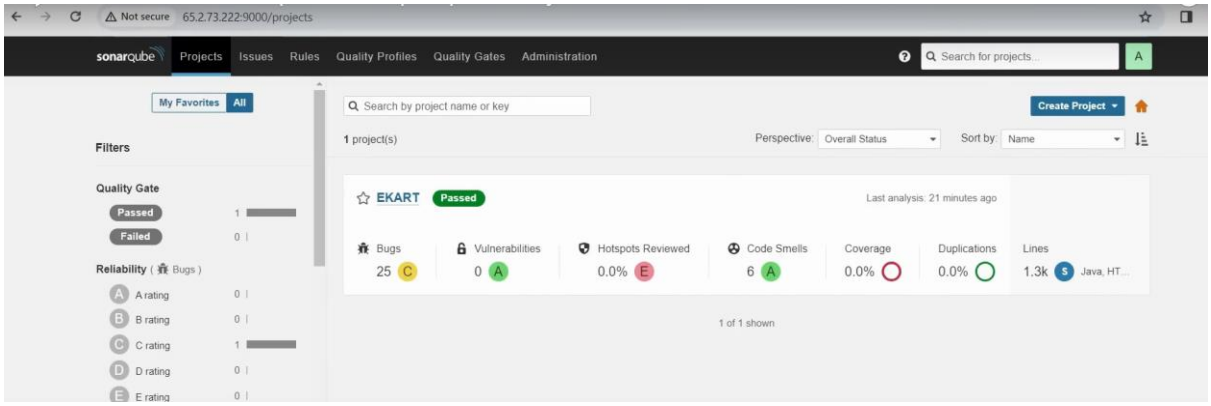
```
69          }
70      }
71
72      stage('Trivy Scan') {
73          steps {
74              sh "trivy image adijaiswal/ekart:latest > trivy-report.txt "
75          }
76      }
77
78      stage('Docker Push Image') {
79          steps {
80              script {
81                  withDockerRegistry(credentialsId: 'docker-cred', toolName: 'docker') {
82                      sh "docker push adijaiswal/ekart:latest"
83                  }
84              }
85          }
86      }
87      stage('Kubernetes Deploy') {
```

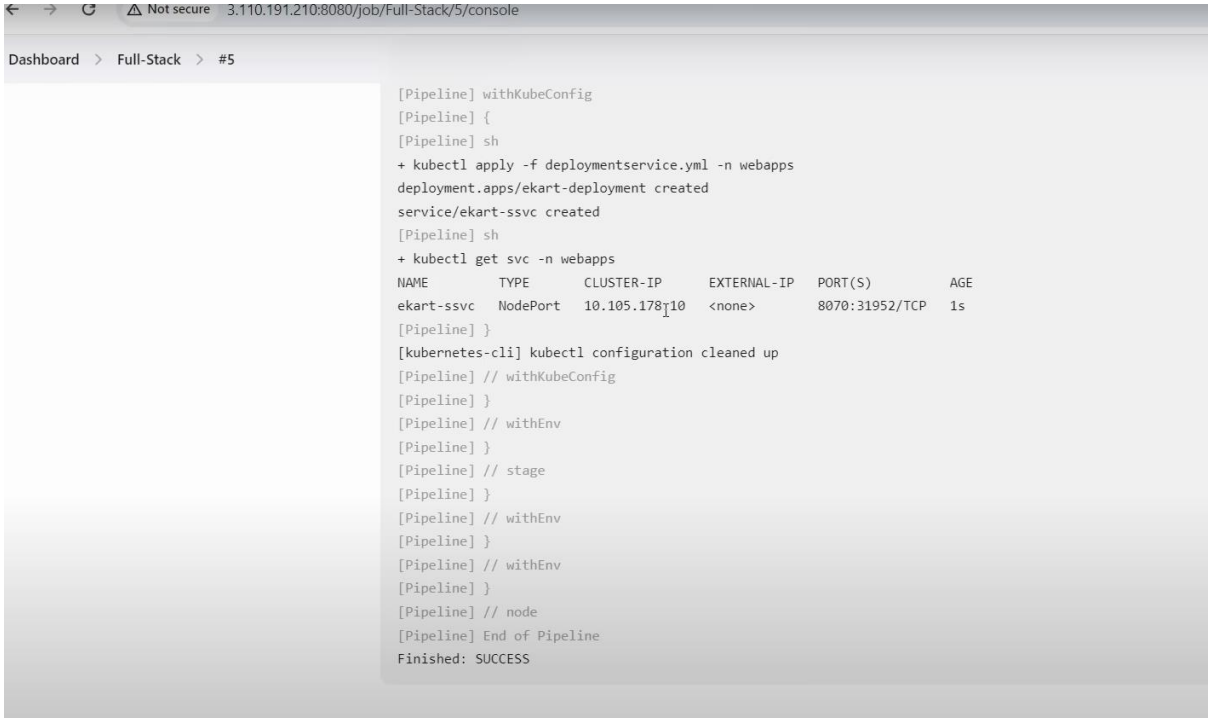
Change image name in deployment.yml

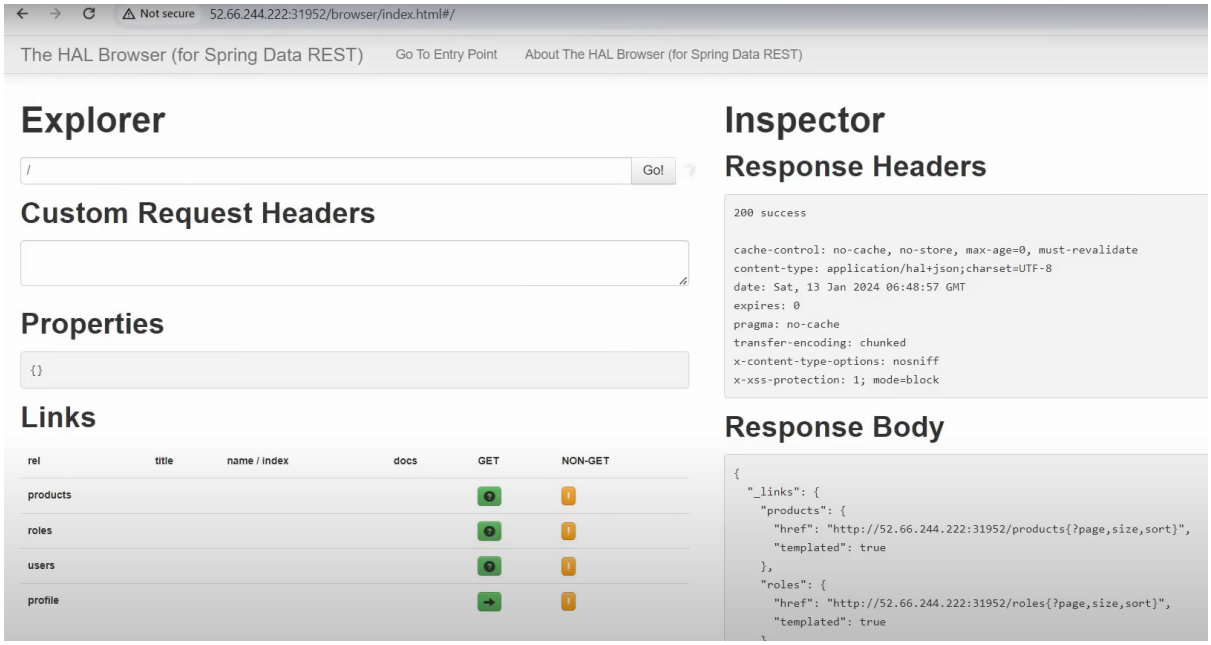


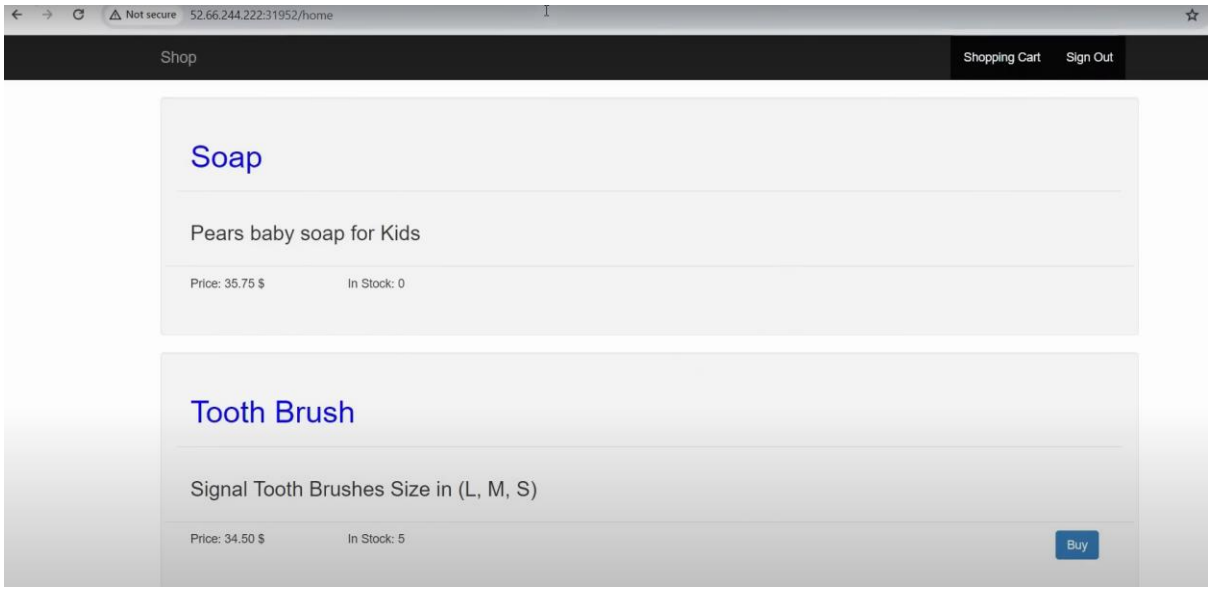

15. Jenkins
16. SonarQube
17. Nexus
18. Master-K8
19. Worker-Node-1
ubuntu@ip-172-31-12-120:~$ kubectl
Command 'kubectl' not found, but can be installed with:
sudo snap install kubectl
ubuntu@ip-172-31-12-120:~$ sudo snap install kubectl -y
error: unknown flag `y'
ubuntu@ip-172-31-12-120:~$ sudo snap install kubectl
error: This revision of snap "kubectl" was published using classic confinement and thus may perform
arbitrary system changes outside of the security sandbox that snaps are usually confined to,
which may put your system at risk.
If you understand and want to proceed repeat the command including --classic.
ubuntu@ip-172-31-12-120:~$ sudo snap install kubectl --classic
kubectl 1.28.5 from Canonical✓ installed
ubuntu@ip-172-31-12-120:~$

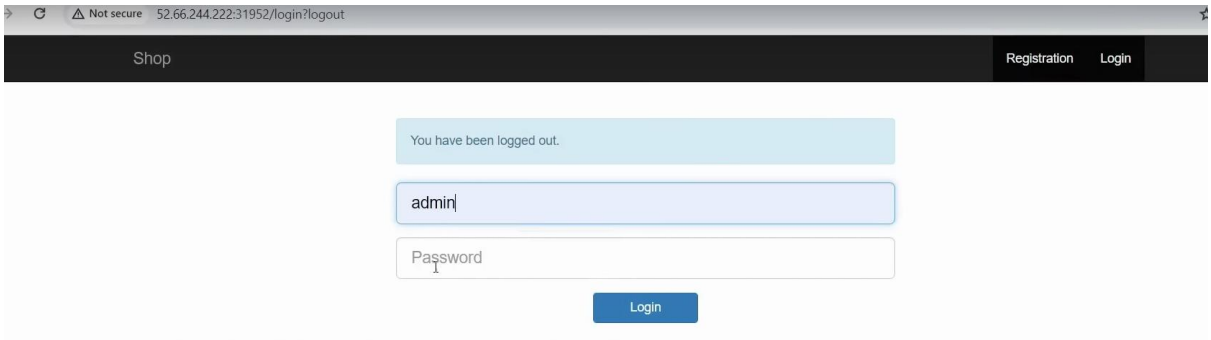
trend
Declarative: Tool Install
Git Checkout
Compile
Unit Tests
SonarQube Analysis
OWASP Dependency Check
Build
Deploy To Nexus
Docker Build & tag Image
Trivy Scan
Docker Push Image
Kubernetes Deploy
Average stage times:
(Average full run time: ~1min 32s)
126ms 2s 3s 3s 17s 59s 4s 7s 10s 22s 20s 1s
#5 Jan 13 11:56 No Changes
113ms 681ms 3s 3s 20s 20s 4s 7s 6s 4s 17s 1s
#4 Jan 13 11:34 2 commits
140ms 3s 3s 3s 14s 1min 39s 4s 8s 14s 40s 23s 964ms
Atom feed for failures


Not secure 65.2.73.222:9000/projects
sonarqube
Projects
Issues
Rules
Quality Profiles
Quality Gates
Administration
Search for projects...
My Favorites
All
Search by project name or key
Create Project
1 project(s)
Perspective: Overall Status
Sort by: Name
Filters
Quality Gate
Passed 1
Failed 0
Reliability (Bugs)
A rating 0
B rating 0
C rating 1
D rating 0
E rating 0
EKART
Passed
Last analysis: 21 minutes ago
Bugs 25 C
Vulnerabilities 0 A
Hotspots Reviewed 0.0% E
Code Smells 6 A
Coverage 0.0%
Duplications 0.0%
Lines 1.3k Java, HT...
1 of 1 shown


Not secure 3.110.191.210:8080/job/Full-Stack/5/console
Dashboard > Full-Stack > #5
[Pipeline] withKubeConfig
[Pipeline] {
[Pipeline] sh
+ kubectl apply -f deploymentservice.yml -n webapps
deployment.apps/ekart-deployment created
service/ekart-ssvc created
[Pipeline] sh
+ kubectl get svc -n webapps
NAME TYPE CLUSTER-IP EXTERNAL-IP PORT(S) AGE
ekart-ssvc NodePort 10.105.178.10 <none> 8070:31952/TCP 1s
[Pipeline] }
[kubernetes-cli] kubectl configuration cleaned up
[Pipeline] // withKubeConfig
[Pipeline] }
[Pipeline] // withEnv
[Pipeline] }
[Pipeline] // stage
[Pipeline] }
[Pipeline] // withEnv
[Pipeline] }
[Pipeline] // withEnv
[Pipeline] }
[Pipeline] // node
[Pipeline] End of Pipeline
Finished: SUCCESS


Not secure 52.66.244.222:31952/browser/index.html#/
The HAL Browser (for Spring Data REST)
Go To Entry Point
About The HAL Browser (for Spring Data REST)
Explorer
/
Go!
Custom Request Headers
Properties
{}
Links
rel
title
name / index
docs
GET
NON-GET
products
roles
users
profile
Inspector
Response Headers
200 success
cache-control: no-cache, no-store, max-age=0, must-revalidate
content-type: application/hal+json;charset=UTF-8
date: Sat, 13 Jan 2024 06:48:57 GMT
expires: 0
pragma: no-cache
transfer-encoding: chunked
x-content-type-options: nosniff
x-xss-protection: 1; mode=block
Response Body
{
"_links": {
"products": {
"href": "http://52.66.244.222:31952/products{?page,size,sort}",
"templated": true
},
"roles": {
"href": "http://52.66.244.222:31952/roles{?page,size,sort}",
"templated": true


Not secure 52.66.244.222:31952/home
Shop
Shopping Cart
Sign Out
Soap
Pears baby soap for Kids
Price: 35.75 $
In Stock: 0
Tooth Brush
Signal Tooth Brushes Size in (L, M, S)
Price: 34.50 $
In Stock: 5
Buy


Not secure 52.66.244.222:31952/login?logout
Shop
Registration
Login
You have been logged out.
admin
Password
Login